

SMALL GRANTS PROGRAMME ON

The interrelationship between gender and malaria among the rural poor in Jharkhand

Sama



Achutha Menon Centre
for Health Science Studies.
Sree Chitra Tirunal Institute
for Medical Science & Technology
Trivandrum, India



GENDER AND SOCIAL ISSUES IN
REPRODUCTIVE HEALTH RESEARCH

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The interrelationship between gender and malaria among the rural poor in Jharkhand

Sama—Resource Group for Women and Health*

**Small Grants Programme on Gender and
Social Issues in Reproductive Health Research,
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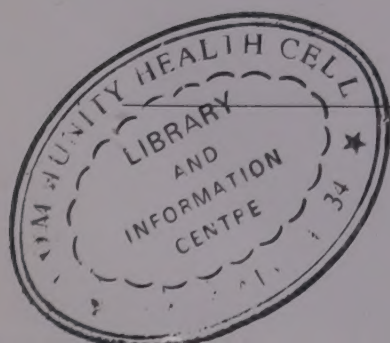
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Glossary and list of abbreviations

| | | |
|---|---|--|
| Adiya system | : | Sharecropping |
| ANM | : | Auxiliary Nurse cum Midwife |
| Bagan | : | Garden |
| Bojha | : | A person from whose body blood is taken for performing certain rituals |
| Bora | : | Gunny bag |
| CCL | : | Central Coalfields Limited |
| Chatai | : | Mat |
| Chiretta (<i>andrographis paniculata</i>) | : | Medicinal plant, taken during fever |
| DDC | : | Drug Distribution Centre |
| Devi Maa | : | Goddess |
| DMO | : | District Malaria Office |
| FPAI | : | Family Planning Association of India |
| Gendra | : | Made from old clothes stitched together and used as a blanket |
| Gamla | : | Pot-shaped iron containers |
| Ghar bhadhna | : | To keep the house "intact" by performing certain rituals |
| Gur | : | Jaggery |
| IEL | : | Indian Explosives Limited |
| Jhar | : | Shrub |
| Karkat | : | Asbestos |
| Khajoor | : | Date |
| Khapra | : | Burnt brick/tile |
| Khatiya | : | Cot |

| | | |
|-------------------------|---|----------------------------------|
| Khoya | : | A medicinal plant |
| Majdoor | : | Labourer |
| MTP | : | Medical Termination of Pregnancy |
| Mukhia | : | Village headman |
| Nala | : | Drainage outlet |
| Ojhas/ Bhagats/ Shokhas | : | Traditional healers / shamans |
| Parvat | : | Mountain |
| PHC | : | Primary Health Centre |
| Phus | : | Type of grass |
| Phutiya | : | Basket |
| Pora koila | : | Burnt coal |
| Pual | : | Hay |
| Pucca house | : | Cemented house |
| RMP | : | Registered Medical Practitioners |
| Sarkar | : | Government |
| Sarkari | : | Government bodies |
| SC | : | Sub-centre |
| Sikri | : | A long chain made of iron |
| Soup | : | Winnow |
| Tabeez | : | Amulet |
| Talab | : | Pond |
| Tard | : | Open field |
| TBA | : | Traditional Birth Attendant |
| Vaid | : | Ayurvedic healer |

Executive summary

This is a qualitative study conducted by Sama in collaboration with Mahila Jagriti Sanstha, a community-based organisation in Gomia, Jharkhand. The aim of the study was understand the interrelationship between gender and malaria among the rural poor of Jharkhand. The study area was Gomia, one of eight blocks of Bokaro district in Jharkhand.

The specific objectives of the study were: a) To examine how gender, poverty, and reproductive biology influence vulnerability to and the experience of malaria; b) To examine how these factors influence health-seeking behaviour, the social, economic and physical consequences of malaria; c) To examine the responses of health care providers to malaria.

The study was based on in-depth narratives of 39 respondents and 11 key informants. The 39 respondents comprised 14 men, 14 women, and 11 pregnant women. This number was arrived at through random sampling from a list collated through house-listing. The criteria for selecting the sample were: (a) The respondents had malaria in the last two years (backwards from August 2003), and (b) They belonged to a population living below the poverty line. The second criterion was dropped for pregnant women due to limitations in number.

Other data collection methods include mapping of villages and health services, and observation. Apart from the tools used to collect primary data, secondary data was collected from official records, and newspaper cuttings were maintained to gather an overall epidemiological profile of the area.

The vulnerability and experience of malaria was examined at two levels — the community and the individual— that placed respondents at risk to frequent episodes of malaria. The geophysical characteristics of Gomia, seasonal employment, hazardous occupations, and dependence on natural resources for livelihood, contributed to making malaria endemic. These factors also resulted in economic and food insecurity. Poverty emerged as an overarching factor across all categories of respondents. This was reflected in their dietary intake, mainly of starch (*maar*) rice, lack of warm clothing, and poor living conditions. These constituted the larger risk factors experienced by the communities.

Individual vulnerabilities included age, family size, and household income. Gender and the reproductive biology of women placed them in a far more vulnerable position. This study reveals that even in comparable economic situations (poor households) men were better positioned as compared to women in terms of vulnerability to and impact of malaria because they got more rest and care.

The impact of malaria on women was made more severe because of their social, economic, and psychological burdens. Women, especially in the age group of 35-40 years, faced harassment from their husbands and in-laws for expenses incurred on their illness and their inability to continue with the household work. Daughters and girls were forced to become the main caregivers. The economic burden caused due to prior health conditions and the marriage expenses of daughters added a great deal of psychological and emotional stress. Pregnant women reported loss of appetite during malaria, which resulted in low birth weight babies. They reported miscarriages and stillbirths due to malaria medication. Early marriage and frequent pregnancies further increased their vulnerability.

The distant locations of public health services and inadequate delivery of health care compelled respondents to rely on the ad-hoc treatment given by the "compounders" who visited the village, and on traditional healers. Men sought some form of immediate treatment (such as medicines from chemists). Better access to cash, credit, and the power to make decisions about pawning household assets gave them an edge with regard to treatment-seeking. Vulnerability was pronounced among men in the age group of 48-60 years because of their role as bread-earners or because they were dependent on their children for support. It was worse for women in a similar age group because of a decline in their "productive capacity" to earn and make ends meet.

Women depended on the "compounders" for treatment because they provided flexible payment arrangements. They took recourse in traditional healers for treatment and advice. This was true among pregnant women too, who had experienced miscarriages or stillbirths. Five pregnant women sought treatment from recognised medical doctors for fear of losing the child. Expenses on treatment and the level of care received were directly linked to support from the natal family. The burden on the maternal family was pronounced not only among pregnant women; men too were dependent on their wives' natal family for support.

A lack of power to make decisions within the household, economic and household work burden, and prior health conditions placed women in a position more vulnerable to frequent episodes of malaria. Gender and reproductive biology played a significant factor in influencing the experience of malaria among women. These factors cut across overarching factors of poverty, and living and working conditions, placing women at greater risk.

Chapter 1

Introduction and review of literature

1.1 Introduction

From Sama's experience of working with various communities all over the country for several years, we have time and again been confronted with episodes of avoidable and untimely deaths due to communicable diseases, particularly malaria. Although both men and women are equally exposed to malaria, during workshops and group discussions, women have often come up with concrete evidence to show that women suffer far more than men in terms of treatment, follow-up, decision-making, and utilisation of services.

On various occasions, they have also articulated from their own experience and perceptions, some very crucial linkages of communicable diseases, particularly tuberculosis and malaria—perhaps because they are so common – with issues related to poverty, the decline in their access to natural resources, environment degradation, and the change of lifestyle and food habits, to name a few. These larger linkages are unfortunately neither addressed in policies nor acknowledged by health providers. In fact, gender is the most neglected component in the entire discourse of health, even though several studies poignantly underline these linkages.

One of the important reasons for undertaking this study was Sama's concern about the constant decline in the budget allocation for health and more specifically for communicable diseases. This has been reiterated by various organisations, groups and activists, and from the academia. While comparing the allocation for health in the central sector, out of the total budget of Rs. 795.35 crore, malaria and other diseases (like *kala azar*, filarial and Japanese Encephalitis control), was allocated only Rs. 145.00 crore, i.e. only 18.23 per cent. [1]. Based on calculations from the Health Information of India report, 1999, communicable diseases separately received only 1.55 per cent i.e. Rs. 12.34 crore under purely central schemes of the total health budget. This clearly shows a discrepancy between the needs perceived by the planners and

the actual health needs of the people. It also provides an indication as to why a number of preventable diseases, one of them being malaria, assume dimensions of an epidemic.

The objective of this study is to examine larger overarching factors of gender and poverty that influence the experience of malaria among the rural poor. This study is qualitative and exploratory and was conducted in Gomia, Jharkhand. Poverty further compounds the situation in terms of access to cash, health services treatment, and other resources. The study is conceptualised within the understanding of poverty and gender acting as determinants of poor health outcomes (here specifically examining malaria). Access to resources like cash and credit and health care services determine health-seeking behaviour and the continued vulnerability to communicable diseases.

People's perceptions of illness and the severity of illness are gendered, which reflect in their reporting of malaria. Such interacting factors determine the repeated attacks of malaria or fevers among the rural poor. It is important to understand that gender and reproductive biology may influence the way malaria affects women and men. A gender-based analysis may help in defining different strategies and approaches on the part of the health system to combat communicable diseases.

Keeping the objective of the study in mind, the report is divided into the following chapters. The ongoing chapter reviews literature relevant to the conceptual framework of this study. Chapter 2 specifically deals with the methodology undertaken for this study. The specific objectives, methods, and limitations of the study are in this chapter. Details about the ethical issues regarding this study are also covered in this chapter. Chapter 3 investigates the malaria situation and the range of health services in Gomia. This chapter also highlights people's perception about the existing public health services. Chapter 4 explores factors that affect vulnerability to malaria through the experiences of malaria among men, women, and pregnant women, their perceptions

of "severity" and impact: physical, social and economic, treatment-seeking behaviour and the coping mechanisms adopted by them. By examining the larger determinants of vulnerability, this chapter seeks to draw out common trends and differences within each group and across the three groups. Chapter 5 gives the conclusion and the recommendations that have emerged from the study findings.

1.2 Review of literature

This section provides a review of relevant literature to understand the broader inter-linkages between causation and prevalence of disease. It seeks to examine the larger factors of poverty and gender that interplay in the prevalence and experience of communicable diseases such as malaria in a population. Factors of unemployment, abject poverty, and the quest for daily survival play an important role in disease prevalence. Gender-based differences are further compounded through factors of poverty, availability, and accessibility to health care services.

1.2.1 Malaria as a communicable disease

Malaria flourishes in situations of social and environmental crisis, weak health systems, and disadvantaged communities. Malaria can pose an immense threat to human life. Malaria is one of the most common communicable diseases that continue to affect a large population, especially in developing countries. Malaria kills between 1.5 million to 2.7 million people every year and adversely affects a further 300,000 to 500,000. [2]. It is an infectious disease transmitted by mosquitoes, caused by minute parasite protozoa of the genus *Plasmodium*, which infects human and insect host alternately. [3].

According to Knell (1991), the typical symptom of malaria is a violent fever lasting six-eight hours recurring every two-three days. The difference species of plasmodium cause two types of intermittent fever—a tertian fever has one day free between paroxysms; a quartan fever has two. Anaemia and enlargement of the spleen develop as the disease progresses. There are four species of plasmodium that infect man. They are:

(i) *Plasmodium Vivax* (Tertian) (ii) *Plasmodium Ovale* (Tertian) (iii) *Plasmodium Malariae*

(Quartan) and (iv) *Plasmodium Falciparum*. The first three may cause severe illness, but are rarely fatal. The fourth (*Plasmodium Falciparum*) causes much more serious illness often leading to coma and death within a few days. This has many names, including aestivo-autumnal fever, malignant tertian malaria (MT), and cerebral malaria. *Plasmodium Falciparum* is the most common malaria parasite. [3].

According to a WHO document (2000), India contributes 80 per cent of malaria cases while more than 65 per cent of malaria deaths occur in Myanmar. [4]. The National Family Health Survey 1998-1999 data provides rural/urban morbidity figures for diseases like asthma, tuberculosis, jaundice, and malaria. The data shows that figures for malaria were highest at the all-India level as compared to other diseases both in rural and urban areas. A percentage break-up of the two tables [5] of the number of persons per 1,00,000 usual household residents suffering from malaria (during the past three months) at an all India level in 1998-99 is shown in Table 1.1. Malaria among the rural population is higher as compared to other illnesses like tuberculosis, asthma and jaundice.

Table 1.1: Rural- urban break-up for illnesses (in percentage of 1,00,000 people)

| Diseases | Urban | Rural |
|--------------------------------|-------|-------|
| Asthma | 1.96 | 2.65 |
| Tuberculosis | 0.39 | 0.60 |
| Medically treated tuberculosis | 0.31 | 0.45 |
| Jaundice | 1.23 | 1.41 |
| Malaria | 2.16 | 4.25 |

Source: NFHS-2 1998-99: 200-201

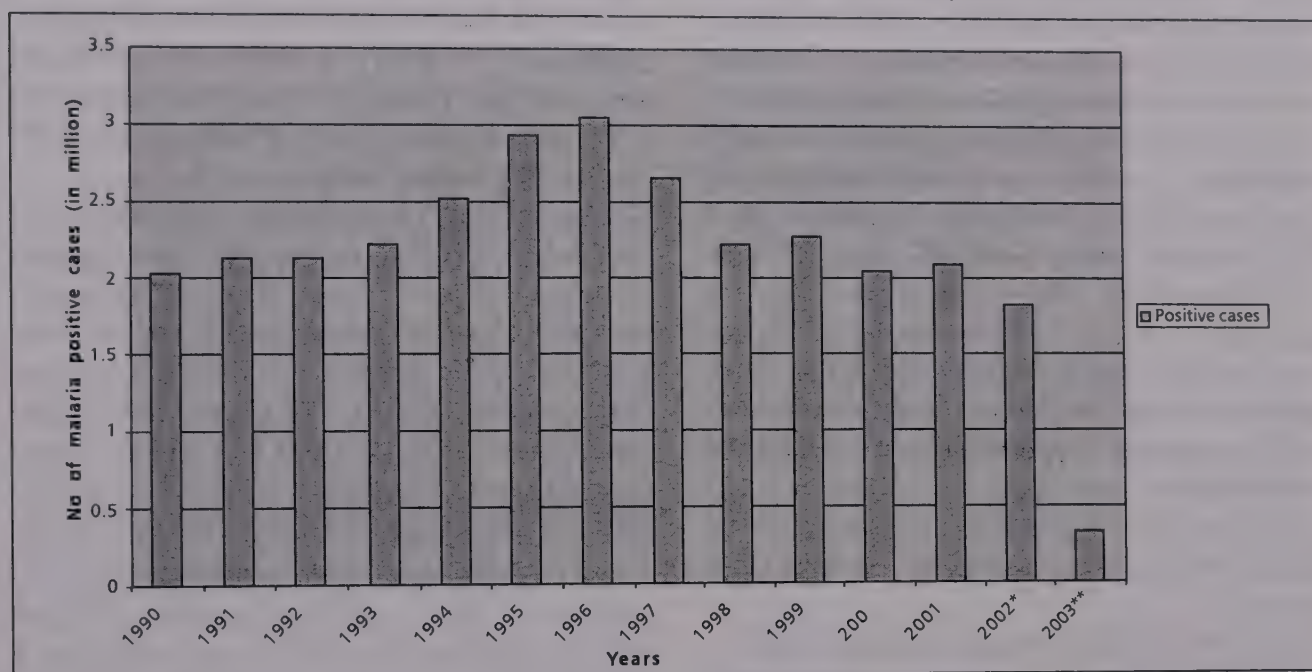
According to the NFHS (1998-99), "Rural residents are twice as likely to suffer from malaria as compared with the urban." [5]. The resurgence of malaria especially *p. falciparum* cases and the resistance of anti-malarial drugs have resulted in an increase in malaria mortality and morbidity in India.

The Annual Report of the Ministry of the Health and Family Welfare 2002-2003 states that during the year 2001, there was a marginal increase (from the year 2000) in the annual incidence of malaria by 1.14 per cent. It shows a 4.95 per cent

decline in the *p. falciparum* cases [6] as compared to an increase of 8.4 per cent from the year 1997 to 1998. [7]. The following two charts consolidated from

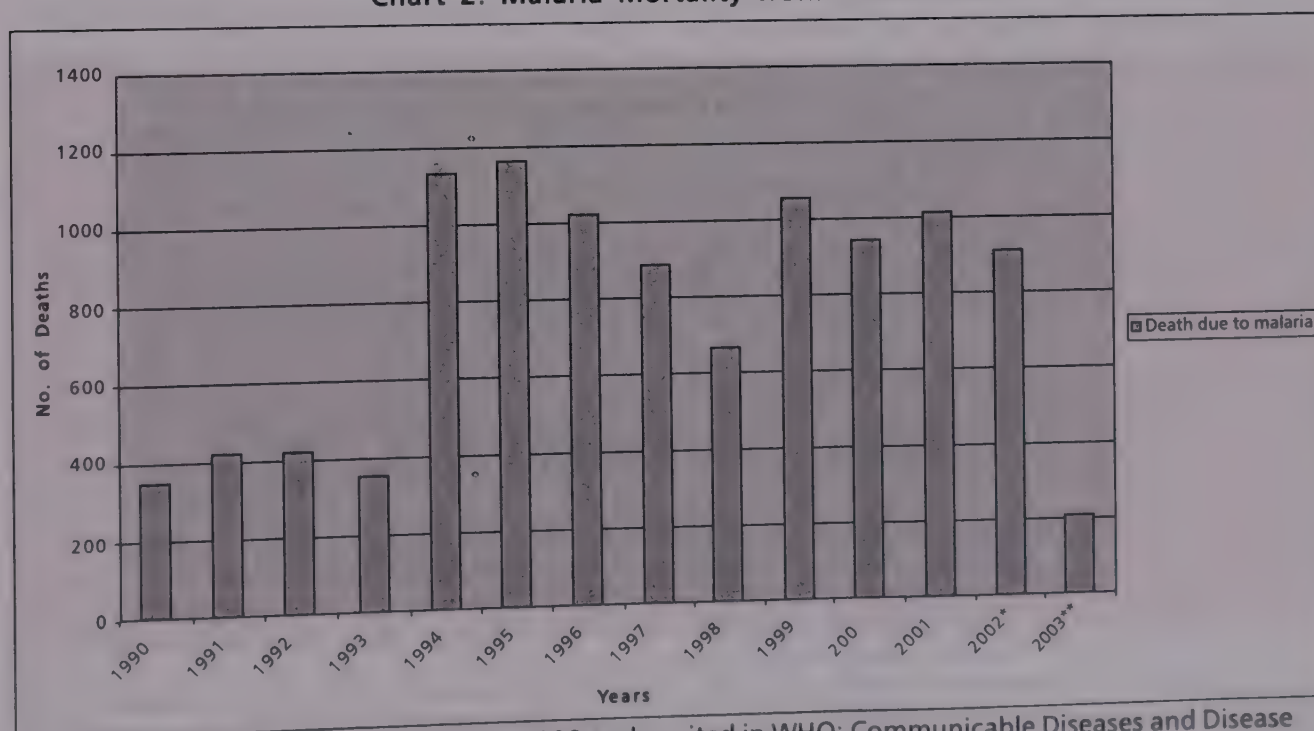
two different sources illustrates the incidence of malaria and malaria mortality in India from 1990 to 2003.

Chart 1: No of malaria positive cases in India (in million) from 1990-2003



Source: Health Information of India, 1999 and as cited in WHO: Communicable Diseases and Disease Surveillance (www.whoindia.org/CDSCD/RBMroll_back_malaria.htm). Note: * (Provisional); ** As per report received from state health authorities to the date of NAMP till July 25, 2003.

Chart 2: Malaria Mortality from 1990-2003



Source: Health Information of India, 1999 and as cited in WHO: Communicable Diseases and Disease Surveillance (www.whoindia.org/CDSCD/RBMroll_back_malaria.htm) Note: * (Provisional); ** As per report received from state health authorities to the date of NAMP till July 25, 2003.

The two charts show that despite a drop in the number of malaria positive cases, there is a sudden increase in the number of deaths from 1998 to 1999, i.e., from 664 to 1060 deaths. There has not been much decline or reduction in deaths due to malaria. The figures for 2003 are only till the month of July. Therefore the number (211) does not include the post-monsoon months. Some of the factors contributing to the continued high prevalence of malaria can be attributed to the increasing drug resistance of *p. falciparum* that has been cited in reports like WHO, National Profile for Women 2000. Some of the reasons for the increasing drug resistance are due to the adaptability of plasmodium, the use of anti-malarials for prophylaxis, and for inadequate routine treatment of undiagnosed fever in the endemic areas.

1.2.2 Relationship between poverty and malaria

Many researchers suggest that "malaria is a disease of poverty" as are infectious diseases in general. "The major risk and burden of disease are concentrated in the poorest segments of a population, from low social class, that always has a high proportion of women and children." [8, 9].

Socio-economic factors are clearly related to health risks including the risk for malaria. In malarial areas, the poor are disproportionately at risk for the disease. [10]. Cultural references to sex differences vary and even biology is not considered definitive, as men's and women's roles are the result of social relations. It is the poor and underprivileged that are most at risk and experience the most mortality because of precarious living conditions and often inadequate health services.

In India, 26.10 per cent of the population lives below the poverty line. [11]. The Planning Commission defined BPL on the basis of the income per month per person. It is different for rural and urban populations. For instance, in 1999-2000 for rural areas, it was Rs. 327.56 or US\$ 6.68 and for urban areas, it was Rs. 454.11 or US \$ 9.26. The number of poor people in 1999-2000 was 254 million and the rural and urban population below the poverty line was 27.09 per cent and 23.62 per cent [11] respectively. Table 1.1 reflects the burden of malaria as being the greatest among the rural population. A study conducted by Sharma (2003) revealed the interrelationship between poverty and malaria by drawing out an association between the states having a high percentage of BPL population and endemic malaria. [12].

Table 1.2: Prevalence of malaria in the Below Poverty Line (BPL) states

| Year | % NAMP population in current BPL states at risk of malaria | Total malaria cases in India | Total malaria cases in B P L states | % malaria cases in B P L states | Total p. vivax cases in India | % of p.vivax cases in BPL states | Total p. falciparum cases in India | % of p. falciparum cases in B P L states |
|------|--|------------------------------|-------------------------------------|---------------------------------|-------------------------------|----------------------------------|------------------------------------|--|
| 1965 | 28.99 | 99,667 | 29,576 | 29.67 | 73,504 | 29.24 | 26,163 | 30.89 |
| 1970 | 50.35 | 694,017 | 199,743 | 28.78 | 593,902 | 26.08 | 100,115 | 44.98 |
| 1975 | 50.01 | 5,166,142 | 1,843,681 | 35.68 | 4,436,891 | 29.70 | 729,251 | 72.09 |
| 1980 | 49.82 | 2,898,140 | 1,055,750 | 36.42 | 2,310,129 | 26.47 | 588,011 | 75.51 |
| 1985 | 49.86 | 1,864,380 | 940,788 | 50.46 | 1,319,375 | 39.11 | 545,005 | 77.94 |
| 1990 | 50.15 | 2,018,783 | 804,148 | 39.83 | 1,266,665 | 27.40 | 752,118 | 60.75 |
| 1995 | 48.47 | 2,296,008 | 1,465,078 | 50.06 | 1,503,877 | 37.25 | 792,131 | 70.24 |
| 2000 | 52.59 | 2,019,065 | 1,404,737 | 69.57 | 971,149 | 49.28 | 1,047,916 | 88.37 |

Note: In the year 2000, the national average of BPL population was 26.1 per cent (about 260 million). States with high percentage of BPL population in 1999-2000 were: Bihar and Jharkhand (42.60), Arunachal Pradesh (33.47), Assam (36.09), Madhya Pradesh and Chattisgarh (37.43), Manipur (28.54), Meghalaya (33.87), Nagaland (32.67), Orissa (47.15), Sikkim (36.55), Tripura (34.44), Uttar Pradesh and Uttaranchal (31.15), and West Bengal (27.02). Figures in parentheses are in percentages. NAMP: National Anti-Malarial Programme.
Source: Sharma VP. Malaria and poverty in India. Current Science 2003, February 25; 84 (4): 515. [42].

According to the World Development Report 2000/01, the malaria scenario in the last three decades shows a clear divergence, i.e., a decline of malaria in the well-performing states and a reverse situation in states whose economies continued to be stagnant. In states with greater than 26.1 per cent population below the poverty line, malaria remained deeply entrenched and did not respond to the interventions (13). Table 1.2 shows a drastic increase in the percentage of malaria cases in the BPL states (in these states the proportion of population below the poverty line is more than 25 per cent) in 3.5 decades with the year 2000 at 69.57 per cent.

A study by Singhanetra Renard (1993) highlighted people's puzzlement over the focus on malaria. When living in poverty, and faced with a range of serious problems, many of which are life and death issues, people wonder why outsiders pay such attention and resources on what they see as a minor concern within the range of problems they face everyday. Thus, there are those who argue that an attack on malaria must be integrated within an overall development initiative attacking a complex lot of community problems, including poverty. [14].

Apart from poverty as an important variable in understanding the vulnerability to diseases like malaria, gender is also central within the understanding of the matrix of ill-health and poverty. "Moreover, if one considers that women constitute approximately 70 per cent of the poor, then the interaction between poverty and gender may represent the most important risk factor to be addressed in efforts to arrest communicable diseases." [15].

Literature on malaria reveals that both poor men and women suffer greater ill health than their more well off counterparts. It also indicates that poor health and/or illness of family members generally means greater burdens for poor women in comparison to poor men. [16,17]. This is because in addition to the resource constraints that affect the poor in general there are gender inequalities that can place women in particular at a further disadvantage.

1.3 Gender differences in vulnerability to diseases, specifically malaria

Vulnerability or susceptibility to disease is largely linked to various socio-economic factors and

living conditions that include housing, sanitation, diet, and purchasing power. Apart from such factors an important dimension, which has received scant attention, is gender. Gender differences mean that the differences are socially contextualised. The socio-cultural and economic factors thus become important determinants of the health status of a population. The following sections seek to examine specific studies both in the Indian and global context with regard to vulnerability to disease, and specifically examining the category of pregnant women whose immunity is compromised during pregnancy.

Various studies on women's health and access to food, health services, and morbidity status have shown that women especially in the rural areas are more vulnerable due to a host of factors. Lack of accessibility to resources, earnings, a triple burden of work and lack of decision-making power push them further into their already marginalised position. [2, 18, 19, 20].

1.3.1 Access to health care and utilisation of health services

Mc Combie (1986) finds that access to health facilities, severity of illness, and cost were the main impediments to health-centre use. Visits to health centres may entail additional and sometimes prohibitive costs from loss of productive activities. His study shows that there is little knowledge about the relationship between socio-economic status, gender roles, and treatment-seeking. In Uganda, patients from clinics told researchers that pregnant women were among the least likely groups to visit the clinics. [21]. A study in Nigeria found that unmarried pregnant adolescents avoided health services because they felt ashamed about their situation. [21].

Women often lack the authority to make health care decisions for themselves. Different roles of men and women and perceptions of "acceptable levels of discomfort" lead to gender differences in a willingness to accept that they are sick and to seek care. There is some evidence that women wait longer than men to seek care for illness partly due to their unwillingness to disrupt household functioning until they become incapacitated. [22]. Where women's health is low on the family priority list, decisions regarding health care for pregnancy and related complications are usually not in the hands of women.

Studies of health care-seeking behaviour suggest that the constraints of poverty and gender mean that poor women are the least likely to have access to appropriate care and to seek adequate treatment. The range of factors which limit access to poor women include the overall socio-economic status of households, time constraints, composition of households (female headed, extended family etc.), intra-household resource allocation and decision-making relating to seeking health care, lack of education and employment, and social constraints on access to care. [12].

In a study in Ghana, some men argued that they prioritised their wives' health in order to make sure that they were able to fulfil their domestic roles. [23]. However, the irony of such "prioritising" is that women are not seen as individuals who should have access to health care but whose health and well being depends on the discretion of someone else. Women are often seen as caretakers of young children who are particularly vulnerable to severe and complicated malaria and in need of a swift response to illness. The way in which women's position and their relationships with men and senior family members influence their response to their children's illness has rarely been considered. [16].

Lobo's (2003) study of Surat district in Gujarat observed that tension and worry about the loss of work on the farm and about where to bring the money from was of serious concern. Socio-economic factors such as poor housing, crowding, low income, and lack of knowledge of the causes of malaria and educational level have shown to predispose women to malaria. [24].

Oxaal and Cook (1998) stress that women's health problems and access to health care are affected by poverty and gender inequality. Economic growth is not necessarily an important indicator for improving the health status of women as the benefits gets unequally distributed. Their study states that a gender perspective in understanding the inter-linkages between poverty and health is important to understand health-seeking behaviour and the decision-making at the household level for health care services. [25].

Cultural differences and gender interference undoubtedly inhibit more open communication and reinforce the culture of silence, discouraging further

visits to the health centres. Vlassoff (1994) emphasises that it has been widely recognised that health service providers treat women in an inferior way and they are therefore hesitant to seek treatment. [26].

Another direct linkage between gender and the greater risk of acquiring communicable diseases is food intake. Historical studies on malaria mortality, for example Christopher's (1909) study and later followed by Zurbrigg (1992) on malaria mortality in Punjab (1860-1947), have drawn linkages between various factors including access to food. Zurbrigg argues that due to a decline in famine there was a shift from acute (starvation) to chronic hunger, which was reflected in a decline in malaria mortality in Punjab. [27]. The link between malnutrition and risk and/or aggravation of infectious diseases has been amply supported in research literature, especially on tuberculosis and malaria. Diet is an important aspect in increasing the vulnerability to diseases, and this facet needs immediate attention from scholars.

Sen (1998) argues that the gender dimension gets subsumed within other socio-cultural factors in the understanding of health. She realises that though men engage in some activities (such as hunting) that put them at increased risk for malaria in general, women bear the greater burden because of issues related to poverty, access to health care, and control of resources.

Gender differences in living and working conditions of women and men also lead to variations in male and female exposure to infection. [28]. A study in Nigeria shows that the prevalence of schistosomiasis in girls is highest at the age of 15 when they are maximally involved in water-related domestic work such as agricultural tasks and washing clothes. The rate drops in males after late adolescence, while in females it remains stable, reflecting the fact that men grow out of playing around water while women's domestic duties may require continued exposure. [28].

Studies on malaria with a gender perspective reveal that a number of factors might contribute to a disparity in reported malaria incidence between the sexes in their lifetime (86 per cent for men and 72 per cent for women). First, men are generally more mobile than women and children, and therefore may be more exposed to infection. Second, 98 per cent

of the community health workers are men carrying their duties from their homes. [29]. Focus group discussions have revealed that women are reluctant to see male health workers for cultural reasons, and they may under-report the occurrence of malaria. [29]. Finally, this study shows that males may receive treatment more often and report a higher incidence than females because their health is given priority by the household. This is because males perform critical strenuous agricultural activities, such as ploughing, that support the household's agricultural production. [30].

A study (1994) conducted in the Caribbean and in Ghana reveals a higher risk for malarial infection for women than for men. It shows that "men's water contact occurred in the context of economic activities such as fishing, transporting bananas for sale, and collecting sand and stones for road making. Women's water contact in the context of domestic tasks included collection of water for household purposes, washing clothes, supervising children's play and personal hygiene." The authors attribute this to the gendered division of labour, which governed the higher frequency of water contact, and consequently the higher risk of malaria infection for women. [31].

Some of the reasons given for the higher occurrence of malaria among men than women are increased exposure, more time outdoors, outdoor sleeping habits, and being scantily clad. This has been refuted by another study (Carey and associates) that concludes that the difference was not statistically significant and could be attributed to the fact that boys were more frequently brought to hospitals than girls. [31].

Understanding these patterns for risk of malaria would influence the recommendations for prevention of infection. One of the most important findings of the study is that the burden of illness rates is disproportionate on the economically and socially disadvantaged women. Excess morbidity was found among women who were not employed, women living in poor neighbourhoods, and those living without modern amenities.

Behavioural differences might make a particular age group or sex more vulnerable to attack. A study in India found that men, who usually sat outside in the evening, are at a greater risk to being

bitten by mosquitoes than women, who are usually inside the kitchen preparing food and therefore protected by the smoke of cooking fire. [26]. Although men may be slightly more susceptible to malaria than women, women's biological immunity is compromised during pregnancy, increasing their vulnerability to diseases. Pregnant women attract twice the number of mosquitoes than women who are not pregnant. [12]. There is greater susceptibility to *p. falciparum* than *p. vivax* during pregnancy.

1.3.2 Malaria during pregnancy

During pregnancy, a woman's body undergoes a complex physiological process that results in suppression of the immune system and thus increases the susceptibility to various pathologies. [32]. Approximately half a million women die each year during pregnancy or childbirth. Of these deaths 99 per cent occur in developing countries. Parasitic infections are among those infections whose frequency and/or severity is increased during pregnancy.

Malaria affects women in various ways. To underline a few, repeated attacks of malaria, especially *falciparum* malaria in already anaemic women, results in worsening of anaemia. Pregnant women inflicted with *falciparum* malaria can experience hypoglycaemia (fall in blood sugar), which can be fatal in the absence of prompt attention. Patients treated with quinine also face the risk of hypoglycaemia. Moreover, hepatotoxicity of some anti-malarial drugs can worsen the damage to the liver occurring due to *falciparum* malaria. Malaria in pregnancy can also lead to development of chronic anaemia, stillbirths and low weight babies, premature labour, abortion, intrauterine foetal death, premature delivery, and even death. [32, 33].

Menendez (1995) maintains that in areas where malaria transmission is low or unstable, the degree of acquired immunity of women before pregnancy is likely to be lower as compared to highly malaria endemic areas. The chances of malaria affecting the mother and her foetus are high in the former. [10]. Menendez's study provides a set of hypotheses to reason out increased susceptibility to malaria during pregnancy. [10].

Numerous studies in Africa have established a relationship between malaria and pregnancy, more

specifically with malaria in primigravida (first pregnancy). During pregnancy, particularly among primi and secundi-gravidas, women are at increased risk of malaria parasitaemia, malarial illness, and anaemia. The frequency and severity of the infection are greater in pregnant women than in the same women before pregnancy and in their non-pregnant counterparts. [34].

A study conducted by Sholapurkar and others in Chandigarh (India) and adjoining villages shows that 78 cases of malaria associated with pregnancy were detected within a total number of deliveries of 5589 during the period of 18 months. Malaria incidence during pregnancy was 14.0 per 1000. [35]. The authors say that on comparing their study with African studies, pregnant women show a slightly higher morbidity among multigravidas than primigravidas.

According to a study by Maitra et al (1993) foetal loss with malaria in pregnancy was found to be twice the rate of miscarriage. Thirty one per cent of foetal loss was due to malaria. There was a relationship between the rate of miscarriage and the period of infection during pregnancy. The rate of miscarriage in infected pregnant women was found to be 16 per cent if infection was in the first trimester of pregnancy, 75 per cent if it were in the second trimester, and 18 per cent for those in the third trimester of pregnancy. [36]. The possibility of miscarriage was found to be nearly four times more frequent among women with malaria than in those unaffected by the disease. [37].

Two studies conducted in India by Kochar (1998) and Singh (1999) show the relationship between malaria infection and pregnant women. [38,39]. Kochar's study is on the effects of *p. falciparum* malaria on pregnancy and its outcome on the non-pregnant female patients. Only smear positive cases (*p. falciparum* or mixed *p. vivax* and *p. falciparum*) admitted in classified malaria wards of PBM Hospital, Bikaner (Rajasthan) were included in the study. All pregnant patients were subjected to regular obstetric check up in the antenatal clinic and cases were followed up until delivery. A total of 288 admitted female patients of *falciparum* malaria were included in the study out of which 45 were pregnant. The susceptibility to malaria infection was found to be high in the first and second pregnancies as 30/45

patients (67 per cent) were either primigravida or second grvida.

In the study 17 out of 45 patients died during the course of illness, 14 out of 45 died with in-uteri death of foetus, two died just after delivery due to acute respiratory distress syndrome (ARDS), and one died due to uncontrolled bleeding (post-partum haemorrhage). The mortality rate was highly significant in pregnant females (37.77 per cent) in comparison to non-pregnant females (14.81 per cent). The most important factor for the increased mortality of 20 per cent in pregnant females was the presence of anaemia (severe anaemia <5 g per cent) was common among pregnant group, while it was 11 per cent among non-pregnant group. In addition, incidence of cerebral malaria was high among pregnant women. [38].

The authors recommended that since the chances of acquiring malaria infection increase during pregnancy, chemoprophylaxis should always be considered to protect pregnant women from hazards of malaria infection.

In another study by Singh et al (1999) conducted in Jabalpur, three years of data from a malaria clinic operated by the Indian Council of Medical Research (ICMR) in the Government Medical College Hospital was analysed to examine the relationship between malaria infection and pregnancy. The study shows a statistically high significant ($P < 0.0001$) prevalence of malaria among pregnant women in comparison to the situation among non-pregnant women. There was a seasonal trend of malaria, with *p. vivax* during the dry hot season (March to June) and *p. falciparum* during the monsoon and post-monsoon period. There was also an increase in the resistance to *p. falciparum* cases.

In their study, out of the 2127 pregnant women, 33 per cent (121) had *p. vivax* and 67 per cent (244) *p. falciparum*, of which 17 cases were cerebral malaria. Among 1984 non-pregnant women with fever, 115 were *p. falciparum* and 35 were *p. vivax* malaria cases. [39]. Women with *p. falciparum* and *p. vivax* were significantly more anaemic than the non-infected pregnant women. But among the non-pregnant women there was no such difference. However, when the association between malaria infection and anaemia was stratified by parity, primigravidae (first pregnancy) with *p. falciparum*

were more anaemic than second gravidae and multigravidae. In vivax infected pregnant women or non-infected pregnant women anaemia increased with increasing gravidae. [39].

There were three maternal deaths (two primigravidae, one multigravidae) among the women infected with *p. falciparum* during the late third trimester (eight-nine months). Two cases with *p. falciparum* infections died in the puerperium with anaemia (haemoglobin 7.1 g/dl). There were three abortions in women infected with *p. falciparum* during the first trimester (all primigravidae), two stillbirths in women infected with *p. falciparum*. The mean birth weight of the babies was significantly lower in the infected group than in the non-infected group. [38]. The study also shows that most women do not go to the hospital until the second trimester.

The authors said that although WHO recommends use of an effective anti-malarials throughout pregnancy, chemoprophylaxis is not administered routinely by the National Malaria Eradication Programme (NMEP). The only recommendation by the Ministry of Health is treatment of febrile episodes. They suggested a routine policy to provide such chemotherapy to pregnant women through malaria clinics in endemic areas.

Pregnant women with malaria are known to have a high incidence of abortion, stillbirth, and low birth weight babies. These women have a higher risk of death. Pregnant women inflicted with *falciparum* malaria can suffer with hypoglycaemia (fall in blood sugar), which can prove fatal in the absence of prompt attention. Patients treated with quinine also face this risk of hypoglycaemia.

1.4 Linkages between gender, poverty, and the physical and economic burden of malaria

The unsatisfactory conditions in which the poor attempt to regain their health combined with the inability to pay for adequate treatment exacerbates what might have been relatively minor illnesses. Furthermore, in households where the main source of income is the physical labour of members, days of employment lost or productivity lowered by illness often mean the starting point of the descent into greater poverty. Many have to sell off the family's

land, pawn their jewellery or livestock to pay for an illness and are unable to recover their property. Illness itself has caused and then undermined the household's total earnings. [25].

There is evidence to suggest that the poorest and the most disadvantaged groups bear a disproportionate burden of the cost of malaria – both in terms of suffering due to morbidity and mortality and in terms of opportunity costs. [22,23]. Most studies that examine equity issues have focused on income inequalities and other proxies for socio-economic status. However, other forms of social disadvantage such as gender, disability, and ethnicity may also lead to inequalities. Hartigan's (1999) study reveals that both poor men and women suffer greater ill health than their more well off counterparts. It also indicates that ill health and/or the illness of family members generally represents greater burden for poor women. This is because in addition to the resource constraints that affect the poor in general, there are gender inequalities and inequities that can place women in particular at a further disadvantage. [16].

Such gender inequalities leave many women without access to financial assets and particularly vulnerable to poverty, which in turn makes it difficult for them to acquire adequate health care. While limited and under-financed public health services obviously affect both sexes, conditions of poverty create the largest problems for women. Poor health contributes to poverty among women. When women are sick they cannot work in the home or in the paid labour force. A study in India found that productivity in the female labour force would be about 20 per cent higher if women's health problems were addressed. [40].

This study, a World Bank report, states that health services must also be affordable. Poor people already pay a lot, both as fees and for the indirect costs of health care, including "unofficial fees" (corruption), transport, medicines, and loss of income. This document suggests that there are many cases where free services do not benefit the poor because of the corruption, which results in free medicines being sold and doctors diverting patients to private doctors.

Studies on the impact of malaria on households have generally focussed on the economic

cost of treatment and opportunity cost of productive work time lost by the sick family member. However, women bear a severe burden due to care taking for children and other family members during malaria episodes. For example, it was found in Ghana that a high proportion of the cost of malaria is the opportunity cost of caretakers. [23].

There is a need to further examine the sex-disaggregated data that reflect malaria mortality and morbidity and to probe some of the reasons other than structural inadequacies of health services. Important factors include access to cash, credit, and most important of all, when women consider their

illness as "serious" and in need of treatment. Relevant literature reveals that the incidence of malaria is high in women and especially in pregnant women. Lack of rest and fear of wage loss in fact increase their vulnerability to repeated attacks of malaria or "fevers." The literature also shows that even within better off households the resources spent on men's care and health is higher in comparison to women's health. Scholars have addressed the need for more gender-based research in understanding differential health outcomes. This study seeks to examine some of the gender-based differences through narratives of the rural poor in Jharkhand.

Chapter 2

Methodology

This chapter outlines the objectives, methodology and the conduct of the study. This study seeks to understand from a gender perspective whether there are differences in the experiences of malaria among women and men (in the 18-60 age group). It tries to understand how woman's reproductive role affects this experience in a specific socio-economic and cultural context. The specific objectives of the study are:

1. To examine how gender, poverty, and reproductive biology (pregnancy) influence vulnerability to and experience of malaria among the rural poor in Gomia.
2. To examine how these factors influence health-seeking behaviour and health outcomes.
3. To examine the social, physical, and economic consequences of malaria.
4. To examine the response of the public health system to malaria.

2.1 Background to the study

The study area is located in Jharkhand, a state carved out of Bihar, which came into being on November 15, 2000. In a population of 26.9 million (Census 2001), 77.75 per cent are in the rural sector. The sex ratio of the state is 941 per thousand females and the percentage of literate population is 54.13 per cent. A significant proportion of the population, 54 per cent according to the National Commission on Population (2000) is below the poverty line in Jharkhand. [41]. The Scheduled Tribes (ST) and Scheduled Caste (SC) population is 26.3 per cent and 11.8 per cent respectively according to the 2001 census.

Jharkhand was selected as the study area because: (i) More than 50 per cent of its population is below the poverty line and (ii) It is a state with a very high prevalence of malaria along with a host of other communicable diseases. The 1997 data shows the prevalence of malaria in the state of Bihar (Jharkhand was then a part of Bihar) to be nearly 21 per cent with *p. falciparum* cases at 17 per cent. [7].

2.2 Characteristics of the study area

The area of the study was Gomia, one of the eight blocks of Bokaro district of Jharkhand. The total population of Gomia is 9,76,897. There are 17 panchayats. Five of these comprise a large area in which the sample was located: Gomia, Hossir, Hazari, Saram and Daniya panchayats. The total population of these panchayats is 92,352 of which 15.5 per cent is Scheduled Caste and 6.8 per cent is Scheduled Tribe.

The sex-disaggregated data shows that the difference is remarkably higher among the Scheduled Tribe population in comparison to the Scheduled Caste and the general category, especially under Gomia and Daniya panchayats. For example, under Gomia panchayat, the male/female ST population is 235/970, while in the general category it is 9594/5882. Such difference could be attributed to the higher level of emigration for employment in cities from these areas. This information was gathered during the course of fieldwork at Gomia.

The percentage of literate population is extremely low in these panchayats: 5.2 per cent of the population (92,352) is literate and it is much lower in the case of women. (Annexure 6). The study area has both tribal and non-tribal population. The former are mainly the Santhal, Oraon, Birhor and Munda while the later is a mosaic of different castes or sub-castes like Sundi, Chamar, Majhi, Ravidas and others.

2.2.1 Profile of the area

Gomia block is rich in natural resources and is geographically diverse. It has a thick forest cover and abundant deposits of coal. The block is intersected by the Konar river on which a dam has been built. The villages covered by the study are scattered over all of these three. Karmatiya, Karmatard and Jhirki, for example, lie in the coal mining areas. Bartua, Chittu Daniya and Birhor *tola* are in the forest. Some villages like Karmatard and Bartua are near the river, while Tenughat and Tulbul are near the dam. (See Annexure 7).

Such surroundings are conducive to mosquitoes breeding. Specific studies at the intervention level for "forest" malaria, for example, have reiterated the high prevalence of malaria in these areas. Because of high mosquito potential of these forests, the tribal population suffers intensely from severe falciparum malaria. [42].

With the construction of the Tenughat Dam, considered as one of the largest in Bokaro district, a large number of people were displaced. The displaced population is settled in the relatively newer settlements like Miyaband. The mining sector and the extensive development efforts to sustain large industrial plants and townships have also been recorded as areas of high incidence of malaria. [43]. Mining operations and construction of dams result in a significant displacement of populations and new settlement areas. For instance, in Karmatiya, the Central Coalfields Limited (CCL), a central government undertaking displaced inhabitants from their original habitat for tapping coal and relocated them to other parts. A part of the study area hence has displaced population.

2.2.2 Livelihood and income

Depending on the proximity to the mines, forest and other natural resources, the villagers have taken recourse to the following as means of livelihood. Some of the occupations are caste-based.

(i) Selling coal: Some areas of Gomia are coal-belt areas like Karmatiya and Jhirki. In these areas both men and women earn their livelihood by digging out coal from the rejected mine areas and selling it. The average earning is Rs. 50-60 per day. The entire family, including young children, are involved in this occupation. Working all night in the open and travelling long distances to sell the coal increases their exposure to malaria.

(ii) Making products from forest resources like baskets, *soup*, mats, ropes, *datun*, and *duna*: The Mahli and Turi castes from Tulbul and other forest areas are involved in making baskets and other items like *soup* (winnow) from bamboo. Here too the entire family is involved in this occupation. The men fetch

bamboos from the forest and the whole family makes products sold at between Rs. 5 - 25.

The Birhors of Birhor *tola* collect the bark from the forest and make ropes in their houses that fetch them Rs. 10 per kilo of rope. In forest areas like Bartua and Pindra women and younger children make *datun* and *duna* (small bowls made out of dried leaves) from leaves that they collect from the forest, and sell these in the market for Rs.0.50 for a pack of 20.

Agricultural, contractual, and daily-wage labour in brick-kilns, stone crushing machines, and cultivable land are some of the other sources of employment. In the brick kilns, wages paid are between Rs. 110-140 for 1000 pieces of bricks. Agricultural labourers are paid around Rs. 30-40 per day and are sometimes given food grains along with cash. Stone-crushers earn Rs. 300 weekly for a truckload of stones. Along with wages, the workers are given 200 grams of *gur* (jaggery) and soap in a week. The *gur* is believed to help in clearing the throat as dust and particles enter through the nose and mouth while crushing the stones. Other caste-based occupations include rearing livestock, brewing country-liquor, and making *beedis*.

The conditions under which people work affect the nature and level of exposure to malaria. Apart from economic conditions, several other factors influence people's exposure and vulnerability to malaria. These include housing, sanitation, and availability of safe drinking water. In the study area, the different types of housing, sources of water, and sanitation were observed closely to assess how these conditions are responsible for the recurrence of such communicable diseases.

2.2.3 Housing and sanitation

In many parts of Gomia, the villages are located as *tolas*, i.e., as clusters of houses that are caste/tribe-based. There are exclusive *tolas* for Sundi, Majhi, Birhor, Kumhar, Darzi, and Gwala. There are three types of houses: *kuccha*, *pucca* and the houses built under the Indira Awas Yojana¹ that are cemented and *pucca*. The *kuccha* houses are mud houses with

¹ This is a central government scheme for rural areas. It is classified as: (a) IAY (general)- for the village areas, to those belonging to the SC and ST and freed bonded labourers, a sum of Rs.20, 000 for house construction; (b) IAY (upgradation *yojana*)- under this scheme for those who need to repair their houses, construct toilets, etc., a sum of Rs 10,000 is paid; (c) *Buniyadi* IAY— to those in the BPL category a sum of Rs 20,000 is given for house construction.

khapra rooftops. *Khapra* is made of *metti* or burnt brick/tiles. A rooftop made of *khapra* is called *khaprail*. *Phus* is a kind of grass that is used as a rooftop. *Karkat* (asbestos) sheets too are used as rooftops for some houses. The houses, mainly of mud or brick houses with *khaprail*, are low in height, ill ventilated and dark. People mainly use *khajoor ka chatai* (mat), cots (*khatiya*), *pual* (hay) or *bora* (gunny bag/ sack) to sleep on.

An examination of the living conditions reveal that dark and dingy rooms, with no ventilation or source of sunlight are highly conducive to mosquito breeding and resting. In most of the houses the adjacent rooms are used to keep livestock like cows, buffaloes, and goats. In some places like Belatard and Chittu, the villagers keep livestock in the same room where they sleep. Such living arrangements enhance the levels of risk/exposure that the inhabitants face. Studies like Lobo's (1998) have shown that the conditions in locations such as sheds become important resting and breeding ground for mosquitoes.

In terms of sanitation, a large percentage of the people use *tard* (open fields), *jhari* (shrub), *talab* (pond), or the nearby jungles for defecation. Some houses have a *kuccha* toilet in the backyard with *bora* (sack made of jute) for a shade. A toilet with a commode system is rare in Gomia block, and non-existent among the respondents interviewed.

2.2.4 Water supply

Hand pumps exist in a number of villages but they are non-operational. Some families have wells within their compounds. In a few villages there are wells constructed by the government. People use these wells to wash utensils, to bathe, and for drinking water. The surroundings of these water sources are extremely dirty. At times, the *nala* (outlet)

is near the well or near the hand pumps, which increases the filth around. Many fetch water from the river for drinking. Many prefer to use the well or the river water for cooking rather than water from the hand pump because they believe that the latter delays cooking due to its high salt content.

The above description seeks to provide the reader a background of the area of study. The details clearly highlight the vulnerabilities that the communities are exposed to in terms of the geophysical nature of the area and the hazardous occupations of the people. Poor housing, lack of sanitation, and of proper drinking water facilities increase their risks of exposure to various communicable diseases. The subsequent sections provide the timeline, sampling method, and conduct of the study.

2.3 Timeline of the study

The time taken to do the study was 18 months, with the following tasks:

- Two months for literature review and for identifying local groups
- Two months for finalising methodology, preparations of tools, schedules for data collection, and field visits
- Eight months for data collection
- Three months for analysis
- Three months for the dissemination of findings and planning interventions

2.4 Sampling

2.4.1 Sample size

The study sample was:

- 39 in-depth interviews including 14 women, 14 men, and 11 non-pregnant women
- 11 key informant interviews

The BPL list was collected through house listing and crosschecked with the BPL list at the District Office in Bokaro. There were many discrepancies between the list that was prepared by the investigators and the names in the government records. It was then decided to count only respondents who had a BPL card whether or not they were listed in the block BPL list.

Many of those who needed a BPL card did not have one while the local MLA was a BPL card-holder! What is significant here is that the people not in the block list were unable to access loans and other facilities from the government even if they were card-holders. Another important finding with regard to the BPL card was that in Jhirki village, a private schoolteacher had collected Rs. 10 to 100 from each house promising them a BPL card, which they never received.

2.4.2 Selection criteria for the respondents

The criteria used for selecting the respondents were: (a) presently suffering from or had malaria in the last two years (backward from August 2003) and (b) belonging to the Below Poverty Line group. The sample was as follows:

- 11 pregnant women who suffered from malaria during pregnancy in the last two years
- 14 BPL women affected with malaria
- 14 BPL men affected with malaria

2.4.3 Sample identification method

The method used for sample identification was house listing. House-to-house visits were carried out in different villages. Attempts were made to cover different areas like forests, coal and dam/ river areas. House listing was conducted in 42 villages and hamlets to identify individuals (men, women, and pregnant women) currently suffering from or having had malaria in the last two years (backwards from August 2003). This list provided the sampling frame for the in-depth interviews and the respondents were chosen at random from the same. The list includes the name of the respondent, village name, age, and the period when he/she had suffered from malaria. The house listing was restricted to villages within the five *panchayats* because of the vastness of the area and inaccessibility within the geo-political situation.

2.5 Methods used for primary data collection

2.5.1 Mapping

Village mappings were conducted to chart out the location of various resources like water, health centres, schools, community, and religious centres and settlements. The investigators had drawn the geographical area of the study on a chart depicting all the villages and highlighting the forest, coal mine, dam, and river area. Some of the specific points covered were the village settlements, health care providers, water sources, occupation, schools, *madarasa* / church / *mandir*, transportation and roads, house type, caste-wise *tolas* (clusters), dominant families/politician or *zamindar*, and location of shops. This gave a picture about the kind of resources and distances to health facilities that were available for the people. This mapping was part of a larger geographical area encompassing all the villages in this study. (See Annexure 7).

Mapping of health services included the public health services, private clinics, practitioners, and traditional healers. Two techniques were used to study this aspect: (a) interview of the health providers like doctor, ANM, private practitioner, and traditional healers. (b) Noting key observations about the health centres and hospitals.

Some of the health care providers were re-visited wherever responses were found to be inadequate. This helped in capturing the response of the state health services to malaria, treatment sought by the people, state of the government health services, and the expanding role of private practitioners and traditional healers as immediate sources of cure.

2.5.2 Key informant interviews

Eleven key informants were interviewed. These include three government health care providers, three private practitioners, two traditional healers, one *dai*, one village *mukhia* (head) and one block malaria officer (BMO). The selection was made mainly during the course of fieldwork. A range of questions were posed to the key informants such as difficulties faced by the villagers in accessing amenities like health care, sanitation, etc. A specific questionnaire was prepared to ask the health care providers about infrastructure, disease prevalence, treatment regime, and challenges faced by them in service delivery.

2.5.3 In-depth interviews

A total of 39 in-depth interviews were conducted with the selected sample of 14 men, 14 women, and 11 pregnant women. This was done with the help of a checklist (See Annexure 4 and 5). The checklist included the experience of malaria, health-seeking behaviour, care and support received during illness, and the physical, social and economic consequences of malaria. Information about diet, rest, and access to cash and credit was also gathered from all the respondents. Besides the checklist, attempts were also made to gather information about the respondents' background details, socio-economic profiles, and proximity to different resources, in order to link their response to malaria with the larger determinants of health.

2.5.4 Observation

This technique was used to make important observations about the health system, respondent's living conditions, and the situation at the time of interview. This helped to contextualise the primary information collected through interviews.

While visiting health systems such as the PHC/SC/hospital/clinic, the investigators made a note of the infrastructure, timings, facilities, and drugs available. Some key points for observations and an orientation on the health system was given prior to the visits. Further, observation was used during the course of interviews to keep a note of the living conditions, type of settlement, clothing and diet, sanitation and hygiene etc. For this a checklist was provided to the investigators (Annexure 4 and 5) and its relevance was explained by highlighting the factors that result in placing the respondent at greater "risk" and vulnerability to malaria.

2.6 Methods used for secondary data collection

2.6.1 Official records

Data along with information was collected through visits to the Civil Surgeon's Office and the District Malaria Office (DMO) at Bokaro. For example, information on the prevalence of malaria in Gomia block, progress of the National Malaria Eradication Programme (NMEP), the location and functioning of the Drug Distribution Centres (DDC), preventive measures adopted etc., was obtained.

2.6.2 Local newspaper clippings

Newspaper clippings on malaria and other health and gender issues were maintained by the field investigators to get an epidemiological profile of the study area. This exercise reflects the limited media coverage given to communicable diseases.

2.7 How the study was conducted

With regard to the planned time schedule, we started the process in the field with initial visits and interaction with local groups. The rationale for selecting the area and the local organisation has been explained in a previous section.

2.7.1 Initial visits to the study area

Initial field visits were made to assess the feasibility of undertaking a study and to familiarise the

investigators with the demography, and the geophysical and the socio-cultural features of the area. The initial visits also attempted to discuss the possibility of collaborating with a local organisation, the Mahila Jagriti Sanstha.

2.7.2 Selection of the collaborating organisation and identification of key investigators

During the field visit the investigators had thorough interactions with the members of Mahila Jagriti Sanstha, a grassroots women's group based in Gomia, working in the fields of education, health, and traditional medicine for over a decade. Some of the members of the group are trained *dais* and have experience in conducting surveys. In our discussions, the members of the organisation expressed their interest in participating in the study. In their work with the community they have constantly encountered malarial deaths. They were also interested in taking the study findings further by using them to plan local interventions.

Moreover, in the past years, Sama had conducted workshops for the members of this group on gender and health issues. With their commitment, experience, and familiarity with the local area and language and easier access to the villages, five members of this group were chosen as Field Investigators.

An attempt was also made to interact with other organisations based in Jharkhand like CARE INDIA, Ranchi, and FPAL, Gomia, to get information about the area and the situation of malaria.

2.7.3 Village visits

In order to get insights about the area, visits were made to three villages along with the investigators. We observed that poverty and the deplorable living conditions for most people living in these areas suggested potential links with frequent outbreak of epidemics particularly malaria in the area.

Group discussions were also conducted as part of field visits. These interactions proved very useful in giving rich insights on the community's perception of illness in general and malaria in particular. This significantly contributed to developing a working definition of malaria. The group discussions also brought out the pattern of health-

seeking among the locals, the range and state of health services available, and the high prevalence of certain illnesses such as malaria, diarrhoea, dysentery, tuberculosis, and gastroenteritis. These discussions were conducted in Belatard, Karmatiya and Chittu with 10-12 people, of which most were women.

2.7.4 Preparatory orientation for the investigators

Although the team was well equipped with the skills of conducting surveys, it was felt that an in-depth orientation to the methodology and to deepen their conceptual and theoretical understanding was necessary. The initial orientation explained the objectives and the relevance of undertaking this study. A thorough orientation clarified the concept of gender to build an in-depth understanding on its various dimensions. This was conducted through exercises and activities around the kinds of work that men and women do, both within and outside the house, and the notion of work, both paid and unpaid. The discussions brought out the differential status of women and the discrimination faced by them within families, societies, and other institutions. This provided the investigator with a background to strengthen the concept of gender. In addition the group was asked to map the different type of illnesses suffered by men and women, besides a set of common illnesses.

Above all, the methodology used in this study was meticulously explained. The need to get detailed narrative accounts of the respondents and to capture their perceptions of malaria as an illness was emphasised. Maintaining daily diaries and documenting every detail of the visit was also repeatedly emphasised. Terminologies like in-depth

interviews, key informants, and focus group discussions were clearly explained in each of our field visits. Constant reworking was required on the reports and interviews that helped in improving their writing skills. Ethical issues in research were also clearly explained.

During the discussions it emerged that two of the field investigators had suffered from malaria and had resorted to private treatment. They shared their experiences. Having themselves lived the experience, they were found to be more sensitive while discussing its impact on respondents and their families. In fact, as part of pre-testing they were taken as respondents.

2.8 Ethics committee

An ethics committee was formed constituting Dr. Vandana Prasad and Dr. Ravi Duggal. Dr. Prasad is a paediatrician, Secretariat member of the Jan Swasthya Abhiyan (JSA), and has been actively associated with the Right to Food campaign and child rights. Dr. Duggal is a founder member of CEHAT, Mumbai, and a member of the Medico Friends Circle (MFC). He has been a part of developing ethical guidelines in Social Science Research at CEHAT.

We held meetings with them to discuss the ethical issues concerning the process of the study. The committee members were briefed about the rationale and specific objectives of the study and the methodology to be followed. Some specific concerns and suggestions given by the committee were considered throughout the conduct of the study. These were:

1. Prior orientation of local investigators on concepts and scope of the study and research techniques /tools.

In each team, one investigator conducted the interview and the other recorded it and made the observation notes about the respondent's house and surroundings, respondent's behaviour, family members and neighbours at the time of the interview. On finishing an interview, the team was asked to immediately transcribe and re-visit if necessary. After transcribing the recorded interview the investigators sent the manuscripts along with the background profile and key observation notes. The interviews were initially conducted with the help of the Sama team. Depending on the circumstances, the interviews were conducted either in the backyard, on the terrace, or on riverbanks. Care was taken to maintain privacy of the respondent whenever possible.

During pre-testing the group was asked to constantly read the checklist in order to avoid skipping points or questions during the process of interviewing. It was clarified that the checklist served as a guideline to conduct the interview and need not to be followed in the same order.

2. Maintaining anonymity of respondents, health care providers, and other key informants.
3. Prior written consent of the respondents and the informants (Annexure 1). Consent was taken both for conducting as well as recording the interview. In case the respondent didn't agree to the recording, the investigators documented verbatim in writing. Prior to filling the consent form, the respondents were given a detailed description on the rationale behind the study. It took a lot of effort on the part of the investigators to make the local community understand the importance of the study. They were also constantly probed about the outcome and how it would change their existing situation.
4. Sensitive to the respondent's situation and background while interviewing, the local investigators made several revisits to the respondent's home due to her/his preoccupation with household and other work. Several interviews were done while the respondent continued with their work (for instance cooking, washing, grazing cattle, collecting firewood in the forest) and care was taken not to disrupt the work.

An important ethical dilemma faced by the investigators was the conflict between the role of researcher vis-à-vis the health worker. While the investigators went into the community with the purpose of researching a health issue, they were constantly asked by community members for medicines and information on health systems. Moreover, in some specific cases, immediate attention was also required since the respondent or their family member was unwell and they did not have the necessary access to the health services. In such cases, the investigators as health workers gave medicines such as Chloroquine, FeFolic tablets and Paracetamol with the help of the PHC in Gomia. Information was also given about nearby government health care services that the respondents were unaware about. However, care was taken to not let these interventions act as an incentive for the interview. This was done by suggesting these interventions after conducting the interview and attempting to restrict our role to facilitate health care provision by sharing information and only in rare cases providing it.

2.9 Limitations of the study

1. This is a qualitative study based on in-depth interviews of a small sample of 39 respondents suffering from malaria and 11 key informants. The interventions suggested are based on our field study and for a specific context. Hence extrapolation of the findings to make generalisations on the situation of malaria (and the relationship of gender and malaria) across the country should be avoided.
However the findings of this qualitative study and the rich case narratives are indeed suggestive of the manner in which poverty and gender interplay with each other and the illness, and have an important bearing in defining "severity" of experience of malaria and thus their response to it. It also indicates the need for further research on some significant aspects that emerged from the findings that is beyond the scope of the present study. A thorough literature review and other tools such as observation have also backed up the findings of the in-depth interviews.
2. Inaccessibility of villages due to distances, the political situation, and the necessity to limit the sample size further restricted the geographical boundaries covered by the study. Some of the areas that are highly endemic are going through political instability and conflict for the last few years with various political organisations operating in the area. The local organisation felt that it was unsafe for outsiders to stay and conduct interviews in those areas. While acknowledging these limitations, care was taken to keep the study area representative of the geographical and socio-economic profile of Bokaro district in Jharkhand.
3. The definition of malaria used in this study is perception-based and not clinically diagnosed. Through our prior visits, group discussions, and interactions with the community, it was evident that the people had a very clear perception of different types of fever and were able to distinguish malaria. Our working definition of malaria for the purpose of this study has been developed on this basis.

Chapter 3

Malaria and health services in Gomia

As mentioned in the previous chapter the state of Jharkhand is malaria endemic, with a high percentage of its population living below the poverty line. This chapter focuses on the prevalence of communicable diseases, especially malaria in this state and in Gomia in particular. It also provides a description of the health services in Gomia. The information is based on local newspapers and interviews conducted with the providers. From some of the interviews conducted with the health care providers, a brief epidemiological background of the area is provided below.

3.1 The prevalence of malaria in Gomia

According to an official at the District Malaria Office (DMO) at Bokaro, there is a high incidence of plasmodium falciparum cases at Gomia, Kasmar and Petarwar areas. Gomia is mainly forest area, Kasmar is hilly, and Petarwar is mainly river/dam area. He also said that there are no drug-resistant cases although there are frequent cases of relapse or recurrent fevers. The official further said, "Two years back plasmodium falciparum cases were relatively

high, now we have given proper treatment, you can check the reports."

Table 3.1 provides details about the distribution of malaria cases, the number of blood slides collected, examined, the number of positive cases, and sex disaggregated data from the years 1994 to 2000 for the entire block of Gomia.

The table shows that there is a yawning gap between the target and the actual number of blood slides collected. For example, in the year 2000, out of 1,51,682 only 35,537 i.e., only 23.4 per cent of the target was reached. The sex-disaggregated data shows that the total number of male cases (2748) is double that of the female cases (1455) in the entire block. Despite a decrease in the blood slide examination rate from the year 1994 to 2000, there has been an increase in the total number of positive and p. f. cases.

However the Annual Technical Report 1994-2000 (Gomia block) shows that there is a gap between the target slides and the actual slides collected. This demystifies the rise in malaria incidence and falciparum cases. Our field visits, group

Table 3.1: Total number of malaria cases in Gomia block in Bokaro district, Jharkhand, 1994-2000 {Annual Technical Report, 1994-2000, (Gomia block)}

| Year | Population from PHC Gomia | Target for no. of blood slides to be collected | Total blood slides collected | Total blood slides examined | Total no. of +ve cases | Total no. of Pf cases | Total number of patients treated | Total No. of cases | |
|------|---------------------------|--|------------------------------|-----------------------------|------------------------|-----------------------|----------------------------------|--------------------|------|
| | | | | | | | | | |
| 1994 | 949679 | 94967 | 39197 | 39197 | 1671 | 438 | 1671 | 567 | 1104 |
| 1995 | 957230 | 95723 | 27112 | 27112 | 927 | 395 | 727 | 232 | 495 |
| 1996 | 963206 | 96320 | 35768 | 28921 | 1693 | 452 | 1693 | 528 | 1165 |
| 1997 | 1516860 | 151682 | 25992 | 20306 | 1665 | 189 | 1665 | 592 | 1073 |
| 1998 | 1516860 | 151682 | 31228 | 16819 | 929 | 220 | 853 | 381 | 548 |
| 1999 | 1516860 | 151682 | 34026 | 34026 | 3610 | 1195 | 3610 | 1161 | 2449 |
| 2000 | 1516860 | 151682 | 35537 | 35537 | 4203 | 804 | 4203 | 1455 | 2748 |

Source: District Malaria Office, Bokaro, November 2003
 Note: The PHC Report for the year Jan -Nov 1998 was not submitted.

discussions, and the findings of our study based on interviews of respondents reveal that treatment was symptomatic and not based on blood testing, since the blood reports never reached the patients.

The official also said that one laboratory technician is assigned to each of the eight blocks at Bokaro, but at present, there was only one laboratory

After confirmation, primaquine dose is given according to the body weight.”²

In Gomia, private laboratories have mushroomed to conduct examination of blood samples for malaria, jaundice, and other pathological tests where most of the respondents, on the advice of the compounders and doctors undergo blood tests.

Table 3.2: Malaria Progress Report for Gomia block, January-October 2003

| No of slides collected | No of slides examined | Total infected cases | Type | | Treated | Deaths |
|------------------------|-----------------------|----------------------|------|----|---------|--------|
| | | | Pv | Pf | | |
| 2218 | 2008 | 211 | 192 | 19 | 211 | — |

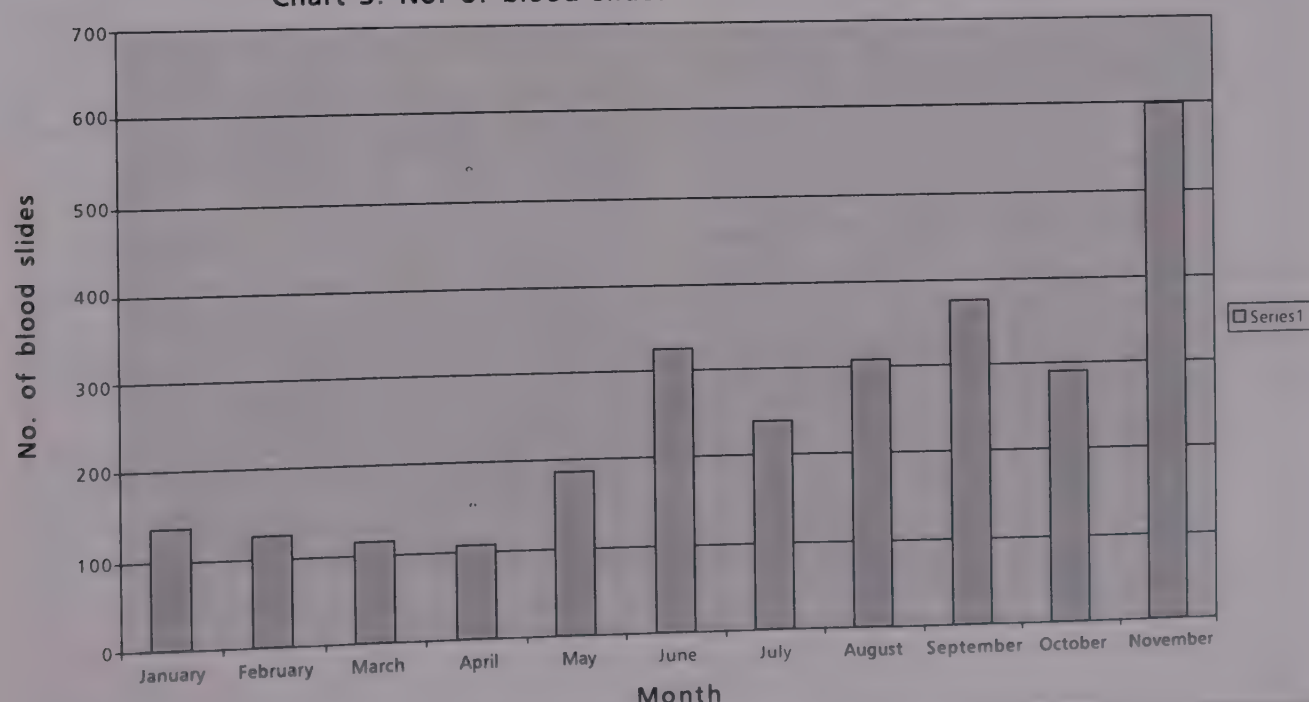
Source: Malaria Office, Bokaro, 2003.

technician at Jaridi block who functioned from Bokaro. Two more technicians are hired on a contractual basis and are paid Rs. 0.60 per slide. According to him the health worker collects the slides weekly and it takes around 10-15 days for the reports to be ready at Bokaro. He evaded the question on the long duration taken for the blood tests. He further said, “There is no problem in testing and recording. Blood samples are collected from the fever cases and the patients are given four tablets of chloroquine for adults and three tablets for children.

It was reported that blood slides were collected at Gomia from different sub-centres and were then sent to Bokaro for examination. But according to the Auxillary Nurse Midwife at the Hazari SC, she was given slides to collect blood smears but she had not taken any blood samples so far. Table 3.2 shows the number of slides collected from Gomia block where the blood slide collected (B.S.C) is only 2218 in 2003.

Data collected from the PHC at Gomia provides the number of slides examined for each month in the year 2003, which is depicted in Chart 3.

Chart 3: No. of blood slides examined from Jan-Nov '03



² His room in the District Malaria Office, Bokaro was very small and congested with registers/records. The room has one table and three chairs. At one side were slides (blood) mainly packed, some bottles of paraffin, and paracetamol tablets. In one corner of the room was a tall rack with cartons, registers, and paper.

The data reveals the malaria is more pronounced during the post-monsoon period and is especially high during the winter months, locally called the "*malaria mah*."

In 2003, out of the 2823 slides collected and examined, there were 233 positive cases of which 206 were *p. vivax* and 27 *p. falciparum* cases. The male/female break-up was 119 and 114 respectively (PHC Gomia, Dec 2003). In the year 2002, all 2804 slides collected were examined. The maximum number of slides collected was in the month of November with 598 and the least was in the month of April. There were a total of 710 positive cases (555 *p. v.* and 155 *p. f.*) and the male/female break-up was 366 and 344, respectively.

3.2 Preventive measures for malaria

According to the official (DMO), there are 110 Drug Distribution Centres (DDC) in Gomia where drugs are supplied for free, and these DDCs exist in every village in Bokaro. A DDC list for Gomia listed individuals who, according to the official, are the residents of the respective village and are the "holders" of the DDC.

In an interview conducted with one of the holders at Bartua who was also a village *mukhia* (headman), he said that medicines ("white tablets") were provided by the PHC around the month of August during the monsoon. These medicines included chloroquine and paracetamol tablets. He gave medicines to his 'village-people' when they were in need, but from the interviews in this area it was found that the people were unaware of such facilities.

The official, responding to a question regarding the funding of the malaria eradication programme, said, "The malaria eradication programme is sponsored by the government of Jharkhand and not the World Bank. The World Bank sponsors only those areas having 50 per cent tribal population. Now the Chief Minister is insisting that the entire Jharkhand area be declared tribal so that the World Bank is able to fund." He wanted the World Bank specifically to intervene in some of the areas

under Bokaro district. Regarding the infrastructure, he said that there was no problem except that it was a little under-staffed.³

He also talked about IEC activities that included the Gram Sabha members teaching people about sanitation, and DDT spraying use of *neem* and other leaves for fumigation. There was also an attempt at biological control, using *gambusia* fish for killing the mosquito larvae in the ponds and stagnant water sources.

Many communicable diseases like diarrhoea and dysentery apart from malaria were commonly reported. According to a health worker at Swang Colliery Hospital, "During the months of November and December, measles and jaundice are high, and between December and January, the common complaints are cold, fever, loose-motion, and aches (back, joint pain, leg). Throughout the year, we get cases of hypertension and blood pressure, with symptoms like nausea and vertigo. Gastroenteritis is common. Accident cases (in mines, roads) add to the number of in-patients. Fever cases are common throughout the year within which 70 per cent are malaria. Diabetes and heart complications are now becoming common."

A health personnel at Kathara hospital said, "Due to the poor quality of water, abdominal pain is very common. There is no filter house in Kathara as in IEL, Gomia. There are a large number of tuberculosis patients, the main reason being coal-dust and as most of the 'working class' is in the habit of drinking. Alcoholism is very high. Cancer of the liver, lungs, and uterus is common."

The local newspaper *Prabhat Khabar* reported deaths due to malaria from some villages like Jumra, Chado, Chalkari and Angwali in the Petawar block. It reported that in the village Cheliya *tard* in Gomia, dozens of people were suffering from malaria and the health centre was not taking any steps to curb it. Deaths were reported due to cold and malaria especially during the month of December from the different blocks.⁴ From Bermo and Nawadhi areas an increase in malaria due to

³ The National Vector Borne Disease Control Programme includes malaria, kala azar, JE, filarial, dengue. A Malaria Control Project with the support of the WB to intensify control measures in malaria endemic and tribal backward areas of the country is being implemented since September 30, 1997, covering 100 districts and 1045 PHCs from the states of AP, Chattisgarh, Jharkhand, Gujarat, MP, Maharashtra, Orissa, and Rajasthan. Out of the total allocation of Rs. 269 crore, including for *kala azar*, funds to the extent of Rs. 123 crore are being provided under the Externally Aided Component (<http://indiabudget.nic.in>).

⁴ The period of fieldwork fell in the month of December, when it was noticed that the use of *gendra* was restricted to the number of old/spare clothes that people had.

unhygienic conditions was also reported. In Karwa *pahar* in the Garwa block, it was reported that there were five deaths and 600 people were suffering from fever (*Prabhat Khabar*, December 12, 2003). Apart from malaria, some of the other causes of death included diarrhoea and cold.

Given the high prevalence of malaria in this area, the following section examines services, including malaria-specific services that are made available by the public health system.

3.3 Health care services

A variety of health facilities exist in the Gomia block of Jharkhand that are both public and private. The public health facilities include government health establishments like sub-centres (SCs), a Primary Health Centres (PHC) and a sub-divisional hospital. The private health facilities include:

- a) Hospitals run by industrial units like the Indian Explosives Limited (IEL).
- b) Hospitals run by semi-governmental companies like the referral hospitals of Swang Colliery or Central Coalfields Limited (CCL).
- c) Hospitals run by missionary organisations.
- d) Clinics run by registered medical doctors as well as semi-trained medical practitioners—locally known as “compounders,” who have worked as assistants of medical doctors or trained under them.
- e) Another important section of private providers is traditional and faith healers, called *ojha*, *bhagat*, *bhagtin*, *shokha*, and *vaid*, who practice shamanism or provide herbal and ayurvedic treatment.

Within Bokaro district, the sub-divisional hospitals are located at Chas and Tenughat. There are two referral hospitals at Bermo and Jainamore. Under the Chas sub-division, there are two PHCs: PHC Chas (including Bokaro Steel) and PHC Chandankiyari. Under Bermo sub-division, there are six PHCs, at Jaridih, Kasmar, Peterwar, Gomia, Nawadih and Bermo.⁵

3.4 Government hospitals

3.4.1 Sub-divisional hospital

One sub-divisional hospital used by the respondents was examined during the study. It is located in a remote area near Tenughat. Due to its

location, the local people, particularly women, rarely accessed the hospital. The hospital has 20 beds and an X-ray facility. However, there are no facilities for blood and urine tests. The blood smears are sent to Bokaro for testing. The results take almost a month to reach Tenughat. The hospital has two doctors. One is a surgeon and the other a female doctor who hardly visits the hospital as she runs her own clinic. The hospital is clearly understaffed. Since it is located in a remote area, the doctors prefer to stay in the nearby town rather than live close to the hospital. As a result the doctors are often not present during OPD hours and emergencies. The stock of drugs is poor. Essential drugs are usually not available and patients are asked to purchase these from pharmacies outside.

Apart from common illnesses, orthopaedic cases are also treated in this hospital. Malaria is one of the more common complaints for which people access this hospital. On an average, 20 to 30 patients are treated for malaria every month. Although RCH services are available, they are limited to basic vaccination and iron capsules to pregnant women, along with delivery services. As mentioned earlier, very few women access this facility because of its inconvenient location.

An additional hospital is situated at Saram, which is occasionally attended by a qualified doctor. It was interesting to note that this hospital functions mainly at the behest of the local political leader. According to the appointed doctor, “I have to attend to the patients that are sent by Sir.” The common complaints attended by this hospital were common cold, cough, fever, and head and body aches. Other cases are referred to other hospitals. Pregnant women, for example, are referred to the sub-divisional hospital at Tenughat. In the absence of the doctor in Saram, the paramedical staff (compounder) provides treatment and medicines for common complaints.

3.4.2 Health centres

The Primary Health Centre at Gomia and the sub-centres at Karmatard, Hazari and Devipur were visited and the respective health personnel were interviewed. The PHC has a medical officer, while both the SCs are managed by the ANMs.

Services at the PHC are limited to vaccination and basic antenatal care. Vaccines such as polio,

⁵ Source: District Office, Bokaro, November 2003

measles, BCG, tetanus and DPT are available and administered once a week. Vitamin E capsules along with iron and folic acid are provided to pregnant women. Chloroquine and paracetamol are provided for malaria and fever if they are available. Contraceptives like Mala D and Nirodh are available at these centres.

The shortage of drugs is a major problem and the facility for basic pathological tests is non-existent. Patients are usually expected to buy medicines from the pharmacies and get their tests done from private laboratories.

Most of the SCs are non-functional. Not a single SC has electricity, water supply, or a lavatory. Only during the Pulse Polio Programme, which is conducted thrice a year, they are given an ice pack. Although the SC at Devipur is situated in a location favouring the relatively remote villages, it is almost non-functional as it lacks basic facilities. Even the elementary requirements of a health centre, like a weighing machine, delivery kit-box, stove, and kerosene oil to be able to sterilise needles, are absent.

3.5 Private health facilities

3.5.1 *Family Planning Association of India, Sasbera*

A branch of the Family Planning Association of India (FPAI) is at Sasbera in Gomia block. This centre caters to eight blocks of Bokaro district. FPAI mainly focuses on conducting safe abortion, safe deliveries, sterilisation of men and women, vaccination of mother and child, providing information about safe delivery, and treating minor illnesses.

3.5.2 *Company hospitals*

a) Ardeer Hospital (Indian Explosive Limited), Gomia: A number of hospitals in the area are run by the industrial units. The chief among them is the "company hospital" of the Indian Explosives Limited (IEL). These hospitals are usually run by the companies to provide health facilities to their own workers and staff. However, it is said that the IEL hospital gives preference to non-staff in order to generate income. About 100-150 patients are admitted every month. The hospital has adequate in-patient facilities and is fairly well staffed.

b) Swang Colliery Hospital: Unlike the IEL hospital, this hospital lacks even the basic

maintenance of wards and operation rooms. But according to a health officer, "This hospital is primary and is functioning properly and cases are referred to Kathara hospital, which is the referral hospital and to the Central Hospital at Gandhinagar in Ranchi."

c) Central Coalfields Limited (CCL) Referral Hospital, Kathara: The CCL Hospital provides free OPD services for non-staff. However they are charged Rs 150-200 per day for in-patient treatment. Many cannot afford to get admitted to this hospital. The hospital is well-equipped and has all the facilities for diagnosis. However serious cases are referred to Ranchi.

3.5.3 *Private clinics*

Apart from the government and private hospitals, there is a mushrooming of private clinics run by qualified doctors (who also work at government health centres/hospitals) in and around Gomia. Some have been practicing for over 20 years. One of the two female doctors interviewed runs a private clinic at Gomia. It provides abortion and maternity services. Other illnesses such as malarial fevers, are amongst the common complaints that are treated. These clinics have no laboratory facility.

3.5.4 *Asha Seva Kendra, a missionary hospital*

The Asha Seva Kendra, a missionary hospital situated at Khamra, Gomia, is a specialised centre for tuberculosis patients. It also caters to patients of malaria, fever, anaemia, polio, and asthma. The centre has been running for 40 years. No blood testing facility is available but sputum tests are conducted for detecting tuberculosis. It is staffed with two nurses, one compounder, and two helpers. A doctor from Ranchi visits once a month to examine the patients. Medicines are available for tuberculosis and malaria.

3.5.5 *Non-MBBS, semi-trained health providers*

A large section of the population in Gomia depends on non-MBBS, semi-trained health providers, locally known as "doctors" or "compounders." They run a private practice and, unlike the qualified doctors, they also visit interior villages like Bartua and Chittu. Most of these practitioners have been trained under a medical doctor outside Gomia for

more than a year, after which they have started practising privately in and around Gomia. They have a specific area (villages) that they visit on "house calls" and attend to emergency cases. Their consultation fees are Rs. 10 per visit and Rs. 30 for house calls. In most cases the people are unable to pay the fees. So they charge a lump sum and allow the people to pay in instalments or according to their convenience. The practitioners interviewed were in the age group of 25-40 years.

3.5.6 Traditional healers

Going to traditional healers is a common practice in Gomia. Associations drawn between illness and economic crises and "evil eye"/ "bad air" result in recourse being taken with the traditional healers, i.e., the *ojha*, *bhagat*, *shokha*, *vaid*, *maulvi* in and around the villages.

These healers, both men and women, practice all forms of remedies through *jhaar phuk* and *ghar bhadhna*. For *ghar bhadhna* they charge from Rs 51 to Rs. 500-1000 depending on the economic condition of the family. In some cases where about five *bhagats* and *bhagtins* are involved in conducting the rituals they may even charge Rs. 2000-8000. As part of the process of *ghar bhadhna*, a *bojha* (from whose body blood is taken for performing certain rituals) is required. For *jhaar phuk* they charge Rs. 11 to Rs. 50. Those who cannot afford it, pay only Rs. 2 or Rs. 5. The healers give rice and water as medicines after chanting mantras. Most of them accept whatever payment is

made in cash or kind. Their earnings are about Rs. 2000 per month and some of them are employed at, for example, CCL and Bihar Board where their salaries are about Rs. 5000-8000.

3.5.7 Traditional Birth Attendants (TBAs)

There are a few Traditional Birth Attendants (*dais*) in this area. These TBAs have their own area of operation, which is restricted to few *tolas*/ villages. In some families it is their traditional occupation. Such traditional methods range from handling deliveries to care for a period of 7-10 days. They are paid Rs. 5-10 for oil-massages. Serious cases are referred to health centres or hospitals. The TBAs are paid higher upon the birth of a male child (Rs. 100) and are sometimes given a sari and Rs. 50 in the case of a female child. Their earnings have now relatively decreased due to the increase in sterilisation.

These details on the health care services act as a backdrop to understand where and why the respondents sought treatment. In order to capture the differences in the experience of malaria across men, women, and pregnant women, it is important to contextualise the analysis by examining the living, working, economic, and health conditions. The attempt here is to weave together these factors with gender and "reproductive biology" as factors that increase vulnerability and thus morbidity. The following chapter seeks to explore these vulnerabilities keeping the conceptual framework of our study in mind.

Chapter 4

Compounded vulnerabilities: Communities and individuals

The poverty, living conditions, lack of potable water supply and sanitation, and the occupations that people engage in, all place the entire population of Gomia block at risk to malaria. Based on a review of studies by Bates, I. et al 2004, vulnerability is defined as a range of factors that lead to variations in the risk of infection and the impact of disease between different individuals and communities. [44]. This review has examined diseases like malaria, tuberculosis and HIV/AIDS. Apart from factors like age, sex, and pregnancy, other factors like poverty, specific livelihoods, and gender increase vulnerability to these diseases.

Apart from the larger risk factors like occupation, income, living and working conditions that can make a community vulnerable, the following

sections, through the narrative of men, women, and pregnant women examine how the conditions of gender and poverty place an individual "at risk" to malaria. These include the perceptions of severity, frequency of relapse and its impact, and their health-seeking behaviour. The common trends and differences across and within group (among men, women, and pregnant women) are examined through these specific issues. Other aspects such as economic and psychological burden, care and support, and coping mechanisms that have emerged are discussed subsequently.

Tables 4.1 and 4.2 provide the age distribution, socio-economic and educational background of the respondents interviewed across different categories.

Table 4.1: Distribution of respondents across different age groups

| Category | 18-26 | 27-35 | 36-44 | 45-53 | 54-62 |
|----------------|-------|-------|-------|-------|-------|
| Men | 5 | 3 | 4 | 1 | 1 |
| Women | - | 5 | 6 | 1 | 2 |
| Pregnant women | 9 | 2 | - | - | - |

Source: Fieldwork, Gomia

Table 4.2: Social composition, marital status, family size, and educational level among respondents

| | Men | Women | Pregnant women |
|---------------------------|-----|-------|----------------|
| Social composition | | | |
| Scheduled Caste | 7 | 8 | 8 |
| Scheduled Tribe | 2 | 4 | 1 |
| Other Backward Castes | 5 | 1 | 1 |
| Others* | - | 1 | 1 |
| Marital status | | | |
| Married | 11 | 10 | 11 |
| Single | 2 | 2 | 0 |
| Others** | 1 | 2 | 0 |
| Family size | | | |
| Nuclear | 6 | 7 | 2 |
| Joint | 8 | 7 | 9 |
| Educational level | | | |
| Non-literate | 5 | 10 | 3 |
| Primary | 5 | 3 | 3 |
| Middle | 2 | 0 | 5 |
| Higher | 1 | 0 | 0 |
| Private | 4 | 1 | 0 |

Note: * Here others include Muslims. **Here others include widow/widower. Source: Fieldwork, Gomia

According to Table 4.2 a higher percentage belonged to marginalised groups (Dalits and the *adivasis*). The level of literacy was much lower among women as compared to pregnant women. Sex-disaggregated data on the literacy level in the different *panchayats* of Gomia clearly corroborate the above figures. Table 4.3 gives the type of occupation that the respondents were engaged in. All these indicators were already highlighted in greater detail in the background of the area of study.

factors that operate to either increase or reduce vulnerability to malaria.

A study by Espino F. et al. in Philippines points out that people recognised malaria through a discrete set of symptoms. These included high fever and intense chills, with or without a severe headache. The causation was given as a complex mixture of beliefs involving environmental conditions, the mosquito vector and parasites, and also included various ideas of dirty water, diet, hunger and

Table 4.3: Occupational distribution among respondents

| Category | Coal selling | Stone crushing | Brick kilns | Daily wage labour | Brick kilns and daily wage labour | Dai | Agri-cultural labour | Selling forest products | Others* | None |
|----------------|----------------|----------------|-------------|-------------------|-----------------------------------|-----|----------------------|-------------------------|---------|------|
| Men | 1 | 2 | 1 | 3 | 3 | - | 1 | 1 | 2 | |
| Women | 3 | - | - | 2 | - | 1 | 1 | 1 | - | 6 |
| Pregnant women | 1 (some times) | - | - | - | - | 1 | - | - | - | 9 |

Note: * Here others include employed at the PHC (Water Supply department.), CCL, running a small business, an overseer and one respondent was a student. Source: Fieldwork, Gomia

4.1 Experience of malaria

Through the interactions with respondents and the local community, the investigators realised that the experience of malaria in Gomia was not restricted to a single episode but implied a prolonged phase of illness with intermittent episodes of malaria. For the purpose of the study, the "experience of malaria" refers to this prolonged phase and has been understood in terms of frequency of episodes and "severity" of illness, care and support received, and the physical impact. The measure of "severity" has entirely been perception-based and entails an inability to work or continue with their daily chores, frequent relapses, and the immediate and long-term health outcomes that affect the well being of an individual.

A gamut of factors was intertwined with the experience of malaria and played a significant role in influencing and shaping it. These were the respondents' living conditions, economic status, occupation, family size, role and status within the household that was indicative of their decision-making and purchasing power. Hence this experience cannot be understood in isolation but through these

conditions of hygiene. [45].

Lobo's study (2003) in Gujarat provides the locals' understanding of the illness. Their perceptions, beliefs and practices clearly revealed that the treatment process depends upon the nature of the illness, sex, age, earning status of the victims, availability of healers, and money at that point of time. The people could, for example, identify the different types of mosquitoes in their villages, with different names. They knew where they breed and why, the reasons being water logging, human and animal waste, and vegetation. [24].

Malaria episodes were concentrated among the respondents in the post-monsoon season and were particularly high during the winter months of November and December, which are referred locally as the *malaria mah*. Most respondents reported a continuum of illness with intermittent episodes of malaria. The number of relapse ranged from one to as many as four or five in a span of one year. In some cases the relapse was reported as "fever" but the symptoms reported—high fever with "chills," severe body and headache—clearly indicated malaria.

4.1.1 Men

Among the male respondents seven out of 14 reported relapse of malaria. Of these frequent relapse was reported in four cases and ranged from three or four times a year to "having malaria after every month or two." A revealing fact was that these four men did not have a regular source of income, were wage labourers, and their average incomes ranged from Rs. 500 -1500 per month. The type of occupation and the place of work also placed them at heightened risk for malaria. The seasonal nature of their occupation did not fetch them money during the monsoon season (the time they succumbed to malaria), and then proper treatment was not sought due to financial constraints. Two of the men were in the brick-making occupation, a seasonal employment that was also referred to by some respondents as a "potential risk site harbouring many mosquitoes."

For example, a young respondent who worked in a brick kiln and who had recently lost his 19-year-old brother to cerebral malaria, said, "I had malaria in August 2003. At first I felt very cold. Then I got high fever. I felt so weak that I was unable to move for five-six days. I was very worried. I was completely exhausted and had to gather a lot of strength to go to the toilet. I had problems in managing money. Now I am better but I catch malaria very quickly." This respondent's father worked as a domestic servant in Gomia. Their total household earning was only Rs. 1800 for a family of seven. The respondent's diet during the malarial fever consisted of rice because he could not afford to buy wheat even through the Public Distribution System (PDS).

Another 26-year-old respondent who complained of frequent relapses every month or two, narrated his experience, "I used to get fever at an interval of every one-two months that stayed for many days. I got shivers and my entire body ached ('*kheechata tha*'). I got better in a week or two and again got malaria. The main problem was that I lost a lot of weight. I could work only when there was no fever. Since I was falling ill every month I could manage to earn a meagre sum of Rs. 50-100."

Although this respondent had a monthly household income of around Rs. 2800, his was an eight-member household with three earning members. They all worked as stone crushers and

found it difficult to earn during the off-season. Not being the sole earning member of the household enabled him to take rest from work during the peak illness, but his inability to work had a significant impact on the family's income.

Another factor that contributed to increased vulnerability to relapses of malaria (fever in every eight-15 days span) was the age of the respondents and their productive capacity. This emerged from the experience of a 60-year-old respondent who cultivated his land for household consumption and was dependent for cash on his son who worked as a stone crusher.

It is interesting to note how the perception of severity was shaped by the frequency of relapses and in turn had a very significant role in guiding responses such as treatment-seeking for malaria. Two men who had had several episodes of malaria did not consider it a serious problem unless they were incapacitated and their ability to earn got affected. The severity of malaria emerged from many experiences and it seemed to have a serious impact on the overall health.

For instance one male respondent, 26, said, "When the illness is severe then we go to the hospital. If it is less serious then 'the doctor',⁶ who visits here, gives medicines for malaria. In my house everyone gets fever. In a serious case we spend Rs. 600-700 each time. However, I did not have much difficulty working because as I keep getting malaria, I'm used to it."

Many male respondents who had not had such frequent relapses also articulated severity and associated it with various factors. Among them a 48-year-old man who had malaria in July and then and again in December 2003 narrated his experience: "I started feeling cold in the field (place of work) itself. I remained in that condition for some time. I realised I had malaria when I got fever with chills. As I didn't have money, I had to delay seeking treatment. Till then I took some home remedies. I am the only person to plough, so sowing got delayed by a week. I was totally unable to move around. I could not eat anything. My head, back, and the entire body would ache. I told others that I wouldn't live."

This respondent cultivated his own field and sought contractual employment during the lean season. Such employment requires travelling to

⁶ The doctor here is referred to the compounder who visits villages. 26

distant areas for work. His work was mostly outdoors and he came home for only three-four hours. He also fetched firewood for the household from the forest and that increased his exposure to places that are "risk areas" for malaria. The weakness caused by the relapse coupled with the impact on his livelihood resulted in an inability to afford treatment and this worsened his health. The economic condition reflected in his inability to purchase food grains from the PDS and the high expenditure incurred on his son's illness are other factors that made his experience of illness severe.

4.1.2 Women

Among the 14 women, six reported frequent relapse of malaria. Of these, four had malaria three or more times while two reported to have had it twice at an interval of 15 days. These relapses influenced their perceptions of "severity" of malaria. Among women who did not report relapse, four said they had a severe episode of malaria.

Women clearly articulated factors that played an important role in increasing their vulnerability to malaria and thus frequent relapse. These ranged from inadequate rest and the burden of household work, to inaccessibility of health care services and overall poverty, to economic insecurity and resulting stress.

Among the women, one respondent, 32 years old, living in a forested area near the river, cited a heavy burden of work and an inability to seek treatment as the reasons behind her frequently succumbing to malarial fever. She also said that this in turn had a severe impact on her illness and enhanced her suffering. She said, "I have a lot of workload. I carry firewood from the forests, fetch water from the river and do the entire household work. When I'm overburdened with work, I immediately fall ill with malaria. My daughter is very young. I have to take care of her. Even during fever I had to fetch water all by myself from the river. My husband works at the riverside and is unable to help in the household work. Only when I am unable to walk, my husband and mother-in-law help me. But once the fever reduces I have to get back to work. Whenever I fall ill, I suffer a lot. Also, when we catch cough and cold we take medicines from here and there and we don't get completely cured, then we end up suffering from malaria."

Besides inadequate rest and an excessive workload, greater exposure to areas that carry malarial risks also highlight the respondent's increased vulnerability to frequent relapses. Another respondent, 40 years old who reported relapse, also said, "When we go to the jungle to fetch firewood or in the kitchen garden to work, mosquitoes bite us a lot more than in the house."

A 55-year-old respondent reported frequent relapse of fever and worsened experience of malaria due to extreme poverty, the resulting stress, and a heavy burden of indebtedness due to repeated morbidity. She was a widow who lived with her son, daughter-in-law and two grandchildren. Her son worked as a contract labourer and had no regular source of income. She worked as a *dai* but had limited earnings as she got only four-five delivery cases in a year because of the increasing number of tubectomy operations. She grazed cows and earned only Rs. 150 in six months. Her fever relapsed when she was grazing the cows in the open field.

She said, "Due to tension my fever comes again otherwise it would have vanished. I worry a lot for my son. He is suffering from tuberculosis. We do not have enough food. I somehow manage to feed him starch rice or one *roti* before he leaves for work and then start worrying for the evening. I am in tremendous debt and the very thought of repaying the amount and interest, gives me malaria."

She narrated her experience when she got malaria while she had gone to a *mela*, "It was five in the evening. My whole body ached and felt a pulling sensation. Then I got fever and started shivering. Despite warming my body, I could not drive away the cold from my body. I had fever that entire night. I do not have a sheet, a shawl or a quilt at home...only a *gendra* to cover myself. When fever comes, my body aches, my mouth dries up, and it stretches a lot. I managed to drink water and sleep."

Other overarching factors that emerged from the narratives were inadequate diet and increased reliance on compounders to make village visits, that in turn increased susceptibility to relapse of malaria and delayed treatment-seeking. These aspects have been explored in a subsequent section on health-seeking behaviour. The perception of severity was influenced by a host of factors. While some related it to the incidence and past experiences

of malaria in the household and burden of other morbidities, others attributed it to immediate and long-term impact that also shaped the response in terms of treatment. A study conducted by VHAJ in the year 2000 in Madhya Pradesh found that 79.48 per cent of the families visited had a case or more of malaria during the last one year. [46].

One respondent, 40 years old, a widow and a household-head, having seen her daughter get malaria twice, feared an attack of cerebral malaria. She perceived malaria as a severe problem and articulated her experience as follows: "When I had malaria I did not feel like eating anything, would vomit out anything that I ate. At first I had fever with chills. I thought I would be alright but the chills increased so I was very scared of cerebral malaria. My head would ache. I get frightened by the name malaria itself."

Three respondents had a prolonged episode of malaria despite receiving proper treatment and belonging to a higher income category. On further exploring the reasons behind their increased vulnerability, it emerged that psychological stress was responsible for their negative experience. In these cases, the attitude of the household members towards their illness and the care, support, and rest they received had a significant bearing on their experience. This aspect has been dealt with in detail in a subsequent section about care and support.

The experience of severity of a 27-year-old woman as linked to the resulting weakness, brought out vulnerability in terms of the additional burden of illnesses coupled with malaria. "I get relapse of fever at an interval of every two-three months. I was troubled with fever for the entire year. I would get fever while working. I had become very weak after malaria and subsequently had jaundice. I turned yellow. I also suffer from asthma. I had lost my appetite and could not eat anything during malaria... just drank *maar* and was completely unconscious. My parents came home and took me. I was unable to get out of bed for almost six-nine months."

Of the 14 respondents, two reported a relatively milder experience. A host of factors responsible for this was relatively better economic status, a lesser number of dependants, better status within the household (in case of the widow), and

proper treatment and care received. These cases have been highlighted below.

A 35-year-old woman recovered from the first episode and did not have a relapse. She was from an economically better-off family of four. Her husband worked as an overseer and earned Rs. 3000 per month. They also had some cultivable land that gave produce which lasted for two months. Her economic status was also reflected in her diet (she could afford to eat grapes and milk) and the treatment sought.

In the other case, though both the woman, who was 27, and her husband were suffering from malaria, they got proper treatment (private) and rest. She said, "I would sleep on the cot. I wouldn't feel like getting up. My son got us treated from a private hospital outside Gomia." Her husband earlier worked in IEL and her son worked as a labourer in the Bokaro Thermal Plant.

4.1.3 Pregnant women

Early marriage has adverse physical consequences for adolescent girls by prematurely exposing them to the risks of pregnancy. [47]. Among the pregnant women interviewed, the age at the time of marriage ranged from as low as 10 years to 20 years. The median age was 17 years. This itself was an important factor in increasing their vulnerability to malaria and compounding its negative impact.

Further, pregnancy increases vulnerability, as there is already a decline in immunity. Coupled with malaria, they may be more malnourished because of poor nutritive quality of food or because their systems are unable to absorb effectively owing to intestinal parasites or malaria. [47]. The literature reviewed shows that malaria during pregnancy can lead to negative health outcomes like chronic anaemia, still births, low birth weight babies, abortions, and can even cause death. Table 4.4 reflects the reproductive histories of the pregnant women respondents.

Among the 11 pregnant women interviewed, five reported a relapse of malaria during their pregnancies. The table shows that women were not just married at an early age but in some cases the span between pregnancies or the frequency of pregnancies was much higher. Of these three

reported frequent relapse (two-three times) and one reported a single relapse at an interval of two-months. Four of the respondents suffered from malaria during their sixth month of pregnancy, that is, between the second and third trimester, two suffered during the first-second month, and the other five between the third and the fifth month.

The relapse of malaria was attributed to inadequate diet and treatment, lack of rest, and the overall poor economic condition of the family that determined access to care. As evident from the experience of an 18-year-old respondent who reported malaria in her fourth and sixth month of pregnancy, her diet during pregnancy and the burden of work placed her "at risk" to malaria. She said, "During my entire pregnancy, I did all the household work. In my first pregnancy, I ate *maar* and rice and during the second pregnancy, drank only *maar*. I also fetch coal from the *khadhan* (mines), firewood from the forests and continued to do so even while I had malaria."

Her state of pregnancy, the strenuous burden of work, a poor diet coupled with her exposure to coal and forest areas could be linked to the relapse of malaria fever in the sixth month. Despite a monthly household income of Rs. 1200, during her first pregnancy she expressed her inability

to afford long-term treatment. Further, there was no support from either her conjugal or natal family, the latter being situated at a distant place.

The experience of malaria in pregnant women was significantly defined by the outcome of previous pregnancies in which they had malaria. This in turn shaped their perception of severity and determined the treatment-seeking behaviour of the woman. Five respondents termed their experience of malaria as "severe." Two of them had malaria followed by jaundice. Three reported having a severe episode of malaria, and had experienced malaria in two consecutive pregnancies. In one such case the respondent, 23 years old, had repeated episodes of fever that lasted for around eight to ten months. This could be linked to the fact that she had malaria in two consecutive pregnancies. In the first pregnancy she gave birth to a stillborn.

She narrated her experience of malaria, "I got fever in the month of April that continued for eight to ten months. I would vomit a lot. I felt all right in the morning but...fever in the evening. I had high fever with shivering and would feel very cold and exhausted. I did not feel like eating and vomited whatever I ate. I had *roti* and *maar* rice occasionally. I did not feel like doing any work and would feel weak every time I conceived. I had a problem with

Table 4.4: Reproductive histories of pregnant women respondents

| Sr. No. | Current Age | Age at marriage | No. of pregnancies | No. of live children | No. of abortions, miscarriage, stillbirths | Experience of a severe(S) or Frequent (F) episode of malaria |
|---------|-------------|-----------------|--------------------|----------------------|--|--|
| 1. | 24 | 15 | 2 | 2 | - | S |
| 2. | 20 | 17 | 1 | 1 | - | - |
| 3. | 18 | 17 | 1 | 1 | - | F |
| 4. | 25 | 17 | 5 | 3 | 1 (miscarriage) | S |
| 5. | 22 | 16 | 2 | 2 | - | F |
| 6. | 30 | 18 | 6 | 4 | 1 (miscarriage) | S |
| 7. | 24 | 10 | 5 | 4 | 1 (miscarriage) | S |
| 8. | 31 | 20 | 4 | 4 | - | F |
| 9. | 19 | 15 | 3 | 1 | 2 (miscarriage) | F |
| 10. | 23 | 18 | 3 | 2 | 1 (miscarriage) | S |
| 11. | 23 | 16 | 2 | 1 | 1 (stillborn) | F |

Source: Fieldwork, Gomia

the medicines, which is why I did not take the complete course. The result was that I had become completely weak and could not walk around."

It was interesting to note that she did visit a doctor, but did not take medicines out of fear of losing her child. She had malaria in her previous pregnancy, which resulted in a stillbirth. She associated this with the medicines that she took for malaria. Although she belonged to an economically better-off household with two earning members and a family income of over Rs. 4000, lack of attention and care from her conjugal family worsened her experience.

One respondent at a young age of 19 had already experienced two miscarriages and malaria in two pregnancies. One miscarriage she felt was due to the medicines taken for malaria. She said, "I didn't feel like doing anything. -Nor felt like eating. If I would sleep my whole body would ache. I had severe weakness and couldn't get much rest. My mother-in-law advised me to continue work because rest would not do good to me."

She went for regular check-ups to the private female doctor since it was her first pregnancy after two miscarriages. Her husband worked as a labourer and her grandmother was a dai. With a monthly earning of Rs. 1500-2000 they had to support a family of eight. In her case, a very vulnerable age coupled with past reproductive outcomes in a poor household aggravated her vulnerability to malaria in the current pregnancy.

For two respondents the severity was prolonged due to their contracting jaundice immediately after malaria. One respondent, 24 years old, belonged to a relatively poorer household and had malaria in the fourth month of her pregnancy. She was able to visit the doctor only after arranging for some money. Later she had jaundice with malaria and was unable to revisit the doctor as she was left with no money. She too had malaria in her previous pregnancy.

She narrated her experience, "When I got malaria I felt very cold and had continuous vomiting. Somehow I managed to cook food and eat. -Around eight in the night I got very high fever with chills. I didn't feel like eating anything as I was throwing up.

I only drank water. I had become like turmeric, yellow in colour. Some said that I had jaundice. But I had to do a lot of household work during pregnancy. I had to cook food, wash clothes and utensils, fetch water and then in the evening light the choolah (hearth) to cook again."

During both her pregnancies she complained of night blindness and complete loss of appetite. Later she said that sometimes when she got high fever she would rest and as she felt better she would start doing all the household work.⁷ A lack of vitamin-A causes night blindness or the inability to see in dim light. [48]. Unless vitamin-A intake is increased, the health condition might worsen. In the above case, improper diet could be the cause of the reported night blindness in the second pregnancy. Besides poverty a significant aspect that could be attributed to the poor diet, work burden, and lack of care extended by the family members was the fact that her mother-in-law and husband were very unhappy that she had given birth to two daughters.

Of all the respondents, only one reported to have received proper treatment and care in the conjugal home. She was shown to a doctor at the Company hospital and had medicines for nearly three months. This was also due to the fact that it was her first pregnancy and she came from a relatively better economic background, unlike another respondent who despite her first pregnancy did not receive adequate rest and care and instead experienced a relapse.

The women associated the loss of appetite and dislike for food experienced during pregnancy to the malarial experience. Vomiting was found to be a common reaction among all pregnant women. Two women linked the dislike for food to persistent weakness that subsequently affected the child's health. One of the respondent, 18 years old, narrated her experience, "During fever (relapse), I did not feel like eating anything. Until my child's birth I drank maar only. I could not eat rice. That is why my child is very weak. She is now 25 days only, but does not look so."

Poor nutrition reflected in the severe weakness during malaria and jaundice in their already

⁷ Her interview was hampered as her mother-in-law and women from the neighbourhood sat in during the interview.

vulnerable state of pregnancy and it worsened their health. These were to some extent reflected in their pregnancy outcomes as reported through miscarriage and stillbirth. These factors have been discussed in the section on the impact of malaria.

4.1.4 Differences in the experience of malaria among men, women, and pregnant women

While contrasting the experience of malaria among women, men, and pregnant women, the differences that emerged have been summarised below. It is important to note that while poverty blurs the stark differences that women and men may otherwise face in economically better-off households, some subtle differences that emerged and significantly impacted on the way each responded to the illness are summarised below:

1. Women in contrast to men clearly articulated factors that may play a significant role in placing them at higher risk to malaria. These included the burden of work, lack of care, the burden of other morbidities on the household, inadequate diet, and stress due to poverty. While women stressed the social factors, men clearly laid more emphasis on the economic factors and linked their experience to their inability to earn.
2. Perception of severity was linked to the ability/inability to go to their workplace and earn in the case of men. In contrast, the women were unable to draw the connection as they were expected to continue the household chores even while they were unwell. Besides the drudgery faced by them in the household, most were engaged in some form of "paid" work in order to supplement the family income. While their engagement with work such as selling coal or stone-crushing placed them at risk of malaria, it was not acknowledged as "productive" work. This clearly reflects the gendered understanding of the notion of "paid" and "unpaid" work and the role of men as the bread-earners and women as the caretakers/givers.
3. Unlike men women did not articulate that they too could be placed at risk at similar

work sites. Women's work was considered as "giving a helping hand." This got strengthened by the wage differentials where men were paid Rs. 50 for ploughing and women were paid Rs. 30 for sowing.

4.1.5 Some commonalties

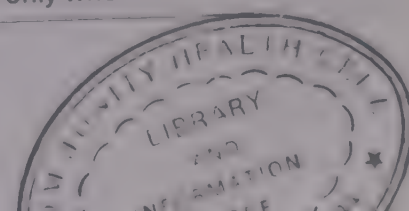
Some common factors observed across each group of respondents who reported severity in terms of frequency or impact was: deplorable living conditions, low earnings, and the low ratio of "productive" vis-à-vis dependent members. The living conditions included dark, damp, and ill-ventilated houses, and a single room housing four-five people, more so for communities engaged in rearing livestock as an important source of income. Animals then were valued as an important asset and mainly kept inside the house. Such rooms were breeding and resting sites for mosquitoes, thus increasing the susceptibility of household members.

It was found from their experiences that an important aspect that affected their experience of malaria was their treatment-seeking behaviour. Suffering or illness was internalised in their daily lives, where their immediate concern was livelihood and survival. From among other factors of accessibility and availability, affordability was an important determinant of the type of health-seeking behaviour among the respondents. Their opinions and perceptions of different providers and the responses to treatment regime followed by the respondents were clearly reflected through their health-seeking behaviour.

4.2 Health-seeking behaviour

Individuals resort to a combination of self-treatment, traditional medicines, and more than one clinic or health-care provider, or what is known as the "hierarchy of resorts." [21]. Lobo's study (2003) in Gujarat repeatedly observes that people do not have a fixed choice of a particular healer, whether traditional or modern, and that it depends upon the context. [24].

Nearly 80 per cent of all the respondents availed treatment from more than one type of provider. Usually, they first went to private practitioners, such as compounders or local healers, in and around the village and only when condition



deteriorated further they sought treatment outside the village. Only two of the 39 respondents sought treatment from government health providers while they were visiting the respondent's village and distributing malaria tablets.

The following narrative clearly illustrates the range of health care providers that the respondents approached. This particular case is of a 35-year-old respondent who suffered from malaria, as did her husband. She said, "The next day of fever my son took me to the doctor. I got a blood test done. I took medicines and injections for 15 days. I did not recover. My husband then took me to a private doctor outside the village. I also went for *jhaar phuk*. People from lower castes don't get satisfied until they go to an *ojha*. I improved slightly and was satisfied but the illness doesn't go until we go to the doctor since the doctor can detect the illness."

4.2.1 Factors influencing the choice of providers

As articulated in our literature review, the constraints of poverty and gender do affect access to appropriate care and adequate treatment, and the decisions made about seeking treatment. The lack of a nearby government health facility or the poor quality of its services and high costs of private health care are some of the larger factors that deter people from seeking treatment and resorting to local compounders and traditional healers for treatment.

Among the respondents some of the factors influencing their choice of provider were availability, accessibility, and affordability of a particular provider, their perception, opinion about the quality of services provided, and the attitude of the providers.

Many of the respondents were either not fully aware of government services or were disillusioned with the services available and this prompted them to visit a private practitioner — compounder / *ojha* / doctor— as a first step towards treatment. They mostly sought treatment at private clinics and if the malaria fever persisted, they visited the *ojha* or *vaid*. Interviews with the traditional healers showed that they did not give medicines, but performed *jhaar phuk*, which according to the respondents helped in making the medicines (allopathic) effective. In a few cases, strong associations were made between illness in the family

and the "evil eye" or "bad air." Visits to traditional healers were made either with this notion or in order to make the medicines more effective. Thus, most of the respondents combined different forms of treatment. Studies in Africa have also linked the perception of illness causation to supernatural forces. For example, convulsions in children are seen as an effect of the evil eye and not just as a symptom of malaria.

The following section attempts to look at different aspects of treatment-seeking behaviour for malaria. They include when, where, and why treatment was sought. Differences across the three groups of respondents are also examined.

4.3 Where is treatment sought?

4.3.1 Men

Of the 14 men, four visited a government centre/hospital, out of which only one sought only government health services while the other three sought treatment from both the government and the private providers. It was interesting to note that the lone male respondent, aged 30, chose to take treatment from the sub-divisional hospital. He took medicines for eight days. Later he bought medicines from the chemist to overcome his weakness against the fear of falling ill. Another respondent who went to the government health centre had his in-laws residing in the place where the hospital was situated. He had taken medicines from a private doctor outside his village for 15 days and when his condition did not improve he went to the government hospital. He stayed with his in-laws and took treatment from the government hospital for other ailments like "chest pain."

In the case of a 37-year-old respondent, an inability to continue treatment from the compounder for three members (including two young children) in the family who were suffering from malaria, led him to a PHC. He said, "When I had malaria, I first went to a private 'doctor' and spent a lot of money on medicines and injections. Both my children also contracted malaria. But in spite of all the injections and medicines, there was no improvement. I was unable to afford the private treatment any more. So we went to the PHC. I thought, at least I will get the injections and

medicines free of cost, as it is a government service. All three of us were diagnosed with malaria."

Another male respondent, 40 years old, who took treatment at the government centre as well as from the compounder revealed, "At the PHC, they told me that I needed a blood test. They said that the blood sample will be sent somewhere else and they will give me the report after a few days. After so many weeks, I still don't know what is the report or its status. I went there a number of times to get my report but was not given any information. The doctor too hadn't come. The medicines I was given helped, but I have had frequent relapses. What can I do... the government establishments work like this. Even if we reach at 10 a.m., they say their duty begins at 12 p.m. They arrive at 12 p.m., distribute medicines for an hour and leave for lunch. When we ask for free medicines, they ask us to purchase them from chemist shops."

A male respondent, 33 years old, who works at the health centre, said angrily, "They treat animals better than humans. Medicines are never available. This is the main complaint of all government hospitals. By labouring hard we manage to arrange for private treatment to be fit and healthy." Another 28-year-old respondent strongly voiced the need for action from the government regarding malaria. He said, "There is no action from the government. There are no medicines or equipment provided. We want a government doctor. As the poor have no money where will they seek treatment from?"

Interestingly one 60-year-old respondent from Bartua had taken medicines from the village headman, who was assigned a Drug Distribution Centre (see Chapter 3).

Among men who didn't access government health services, one respondent gave long distances as the reason, two respondents talked of inadequate facilities and high token charges as the reason and four said they didn't know about it. Among the seven men who visited, only two were satisfied with the services and attitude of the providers. A majority of the men, 10 out of 14, approached a private clinic outside their village and/or bought medicine directly from pharmacies as part of self-treatment. One respondent aged 32 said, "I went to Saram market to see a doctor. I did not undergo a blood test. I told him that I got fever with chills and I had chances of

getting malaria. Then the doctor gave me some medicines for two-four days and said that if it doesn't improve I will give you injections."

In the case of the 30-year-old respondent mentioned earlier, while he visited the government hospital, he also bought vitamins for a year from a pharmacy to overcome his weakness. He said, "Whenever I had extra money I would buy vitamins and keep." He talked about his experience of seeking treatment from a government hospital. He wanted to continue medication because he still felt weak. He complained, "I went to the Anumandalia Hospital and was diagnosed with malaria after a blood test. They gave me medicines for eight days. After the eight-day course, I went back to the hospital for more medicines. But there were no medicines at the hospital. I had to struggle a lot. They would either say there is no medicine, or ask me to come later. I went there four times and ultimately did not get the medicines. Finally I gave up."

This respondent earned his livelihood by selling coal. His monthly income was about Rs. 1200. Non-availability of medicines led to out-of-pocket expenditure. Despite the fact that his earnings were low, he had the purchasing power to buy vitamins to overcome the weakness caused by malaria. This ability was linked to men's mobility and greater access to cash that helped them in seeking immediate treatment. This aspect has been covered separately in the section on delay in treatment-seeking.

Three respondents aged 40, 48, and 60 years initially took home remedies like *chiretta*. All three were unable to afford treatment but were later compelled to seek treatment from the compounders. All three lived in the forested areas. One of them, who was 48, prepared *jari buti* (traditional medicine) himself.

Another respondent, 40 years old, who belonged to a very poor household and lived in a high-risk forested area (his house, according to the field investigators, was filled with mosquitoes) said, "In the morning, I sent my brother to call the compounder. He gives good medicines. He came and said that it is malaria. He took my blood sample. He gave four injections in one day, two in my arms and two in my thighs. He gave me medicines too. I took them for three days and became all right. After that who wants to continue with medicines. I threw

them". This respondent did not know about any government health facility where medicines are provided free of cost.

4.3.2 Women

The women too rarely utilised government health services. Of the 14 women, only three sought treatment from the government sub-centre and hospital besides going to private practitioners. Of these three, only one, aged 40, approached the nearby SC since she had spent a considerable amount of money going to the compounder, ojha and vaid.

Women relied more on the visits made by the compounders or the doctor from the PHC. It was interesting to note that health centre staff visited in the month of August, which is the post-monsoon period. A 36-year-old respondent, who sought treatment from the visiting health staff, narrated her experience, "The government doctor came on his own to the village. We did not call him. As he came he asked who all had malaria. Then I came out from the house and took medicines from him."

When the above respondent's conditions didn't improve after taking the medicines, she visited the private female doctor at Gomia and took medicines proscribed by her for four-five days. Her condition didn't improve. She lastly sought treatment from the local compounder who gave her tablets and syrup. She continued with the medicines for three months and recovered.

In the case of a 55-year-old respondent, her inability to afford treatment from a compounder forced her to visit a government health centre for medicines. She narrated her health-seeking experience, "I went to the compounder alone the next day. Who would accompany me? He gave me medicines. He asked what you would get with 10 rupees. He gave me medicines for four days. I didn't get better, instead my fever increased. Later, I went to a government health centre and asked them to do a blood test. Then they pricked my finger with a pin and took my blood sample on a slide. Immediately after taking the sample they said that it is malaria. They then asked me to collect the medicines. I took them. Later during the night I became very serious. We called the same compounder. He said, 'now since you have got medicines, so I will not give you. The government doctor had treated you, how can I give

medicines?' He asked me to take the prescribed medicines and left the house."

Seven of the 14 women sought treatment from the local compounders when they made routine visits to the village or went to the village "on call." They preferred to wait for him because they were able to negotiate costs and pay on credit or in instalments that ranged from Rs. 50-100. A 40-year-old respondent said, "The compounder comes to the village 'on call'. He gives us medicine on credit. We take medicines and pay him later. This is impossible at a private doctor's clinic. That's why we don't go there." This respondent had first gone for *jhaar phuk* followed by some home remedies. She later sought allopathic treatment.

An important perception among a few women respondents was that "the compounders do not charge fees but only for medicines," and thus they represented a cheaper recourse to treatment. Limited access to cash, lack of mobility, and location of services prevented women from seeking treatment outside the village and this increased their reliance on compounders.

The NFHS data in Table 4.5 gives a picture of the distance travelled by women in rural areas. The NFHS report states that 14 per cent of rural women need to travel at least five kilometres to reach the nearest health facility. Women have travelled a distance of more than 10 kilometres to go to a government centre and have also taken recourse to "any health facility" within the village.

For example, a 47-year-old respondent, who lived in a far-off village and suffered from frequent relapses of malaria, relied only on the visits made by the compounder. Only when the illness became very severe, as in the case of her granddaughter (who had cerebral malaria) did they venture out of the village for treatment. Another case illustrated the severity of circumstances; both the distant location and the inability to access any service forced the respondent to stay without treatment. She had experienced frequent relapses of fever. She said, "Only if the doctor visits I take medicines. Otherwise, I remain in pain when I get fever. If there are any medicines in the house I take them."

Most women also needed a companion to go the health facility outside the village. In the case of a 40-year-old respondent, her brother-in-law and

his wife had accompanied her for treatment to the sub-divisional hospital. The need for a companion along with the tendency to postpone seeking treatment explains the women's dependence on the compounder. This dependence was increased in the case of a 55-year-old woman who headed the household. When severely affected by malaria she stayed without treatment until someone from the neighbourhood called the compounder.

their faith in her treatment. A 19-year-old respondent who had malaria in her sixth month of pregnancy said, "Since 2-3 years of marriage, I had some problem with my menstruation. Because of fear of *dyan-bhoot* (witchcraft), I visited a *shokha* for *jhaar phuk*. He said, 'all this is bad, I shall cure you and you will be all right'. I took hen, fruits as offerings to *Mansa parvat*.⁸ He did not give any medicines but just gave uncooked rice to eat. For eight days I took

Table 4.5: Percentage distribution of ever-married rural women aged 15-49 by distance from the nearest health facility, India, 1998-99

| Distance | Health Facility | | | | | |
|--------------------|-----------------|------------|--------------------------|----------|-------------------|---------------------|
| | PHC | Sub-centre | Either PHC or sub-centre | Hospital | Dispensary/Clinic | Any health facility |
| Within village | 13.1 | 33.0 | 36.5 | 9.7 | 28.3 | 47.4 |
| <5 Km | 28.4 | 39.7 | 40.8 | 25.0 | 32.4 | 38.9 |
| 5-9Km | 29.2 | 16.3 | 15.3 | 25.1 | 17.4 | 9.7 |
| 10+ Km | 28.8 | 9.6 | 7.0 | 40.0 | 21.7 | 3.9 |
| Don't know/Missing | 0.5 | 1.4 | 0.3 | 0.2 | 0.2 | 0.2 |
| Total % | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Median distance | 4.9 | 1.3 | 1.0 | 6.7 | 2.4 | 0.0 |

Note: The category '< 5 km' excludes cases where the facility is within the village; when median distance is calculated 'within village' and when a facility is less than one kilometre from the village, it is assigned a distance of zero. Hospital here includes community health centre, rural hospital, government hospital and private hospital. Source: NFHS-2 1998-99: 46. [5].

4.3.3 Pregnant women

Of the 11 pregnant women, four approached a private doctor, four approached the compounder during his village visits, two visited the compounder's clinic and one sought government health services during the entire period of pregnancy. Six women sought treatment specifically for malaria and approached a range of providers in the private sector. The visits to the government health set-up were limited mainly to the FPAI or the nearby sub-centre, where pregnant women went for tetanus vaccination. One respondent sought treatment from the government health centre only when her condition did not improve after taking medicines from the compounder.

Four women went to the same female doctor (a recognised medical doctor who runs her own clinic) at some stage of their pregnancy. This was mainly because of proximity of the clinic and

this and I felt better. I conceived after this. After getting fever I sought treatment from the private lady doctor. I was given medicines, injections, and tonics to drink. I bought all these privately. I felt much better after consulting her because she is good. I kept going for monthly check-ups. I did not take any home remedies. I visited a *shokha* for *jhaar phuk* because of fear of the evil."

Another respondent aged 31, who had fever at frequent interval of 10-15 days first visited a compounder, took medicines for few days and then visited another compounder. She also visited the FPAI's centre and underwent a blood test, and was diagnosed with malaria. She later visited the female doctor and improved after taking the prescribed medicines. Prior to this, she also visited an *ojha* and a *vaid* for treatment. She visited the traditional healers twice because she was afraid when her health did not improve despite medication.

⁸ This *parvat* (mountain) was of historical significance where people went to seek blessings or to pray for a boon.

A 24-year-old respondent, who had a girl child for the third time reported, "People say that this illness and fever happens when one is pregnant. Some people said that it was because of the stars planetary positions and to do *jhaar phuk*. I did *jhaar phuk* as I had turned yellow due to jaundice. I started vomiting after which I visited the lady doctor. I felt better after taking medicines."

Women resorted to a range of health care providers that included the *shokha* and *ojha*. There was a strong belief in the influence of the supernatural or divine forces that caused ill-health and links between malaria and supernatural forces were common. Studies in Africa have also shown that certain febrile illnesses that are common during the cold and rainy season and that cause severe fever, were perceived to be caused by spirits, witchcraft and sorcery. [17].

Of the four pregnant women who visited this private female doctor, only one aged 24 was unable to make a revisit because she did not have the money. Hence economic constraints also were a deterrent in seeking treatment. An 18-year-old woman who took medicines from the "doctor who visits the village" due to her family's poor economic status said, "He told me that it is malaria and there was nothing to worry. I felt better after taking medicines for two days. I was also given injections. During relapse, the same doctor gave me medicines and injections. During the second time I spent more money, (Rs. 240) than before (Rs. 70)."

In this case, despite being pregnant for the first time, a joint/large family with low income also played a significant role in determining the choice of provider. In such cases, the women would rely on the compounders and his medicines. Another factor determining health-seeking among pregnant women was the need of a companion to accompany them to the health facility.

4.4 When is treatment sought?

An important factor contributing to deciding when treatment was sought was the perceived "severity" of the illness. A common trend found in both women and men was trying out a range of treatments, from self-medication (home remedies) to pharmacies, compounders, *vaid*s, *ojhas*, or simply waiting for the malaria fever to subside on

its own. Only when the illness became "serious" they would seek treatment from private hospitals, clinics or government health centres that may be situated outside their own village. The reasons for this delay ranged from a lack of purchasing power, the distant location of health centres, and their perception of the seriousness of malaria. Another important factor that caused delay was the economic burden of other illness within the household coupled with extreme poverty. This resulted in a continuous cycle of indebtedness and added to the delay in seeking treatment for illnesses like malaria.

4.4.1 Men

Men resorted to some form of immediate treatment by purchasing medicines at the chemists or going to a private doctor for treatment. Of the 14 men, four sought treatment within 24 hours, seven within one-two days. The maximum period of delay was three days in the case of a 28-year-old respondent who had no earnings during the monsoons, the time when he suffered from malaria. Due to the seasonal nature of his employment (he worked in a brick kiln), he was unable to arrange money to seek treatment. However even in this case the man had taken treatment during previous episodes of malaria from a private allopath and a homeopath.

The compounders commonly administered a number of medicines, largely multi-vitamin capsules or injections. When treatment was sought was dependent on the perception of severity. A 26-year-old male respondent said, "When the illness is severe, we go to the hospital. If it is not so bad, we consult the doctor when he comes to the village and take the necessary medicines for malaria from him. If we leave at nine in the morning for the hospital, we don't reach home before 3-4 p.m. Since my work is on a daily wage, I lose my wages for the day. The transportation to the hospital itself costs Rs. 20 per person one-way."

Those who delayed approaching a clinic or any other health service, did take medicines from the market. For instance, one respondent aged 24, on getting fever took paracetamol tablets for three days. He bought the tablets directly from the pharmacy. When the fever did not subside, he visited a private doctor after arranging money for treatment.

He also underwent a blood test for malaria, was administered injections twice a day and took medicines and vitamin capsules.

One respondent aged 48 reported a delay of three days in approaching a doctor. Excessive economic and psychological burden caused due to other major illnesses in the household contributed to this delay. Meanwhile, he took some home remedies as he himself prepared *jari buti*. He could not afford treatment for his son for a severe backache as the cost stated by a surgeon (who worked at the sub-divisional hospital) was between Rs. 1300 -1400. He had hoped that the doctor would be considerate. He has visited different doctors for his son's treatment outside Gomia but to no avail. He said, "I took *chiretta* and *kohya* for three days since I had no money. Then when I became serious I went to the doctor. I had to spend a lot on medicines."

4.4.2 Women

Among women, three took treatment within 24 hours, three within two-three days, four delayed it beyond two-three days and one for nine days. One respondent sought treatment only after 15 days from the onset of fever. A poor household, lack of access to cash, far flung area, and the low priority ascribed to her own health needs because of the triple burden⁹ were factors largely responsible for the delay.

In the case of the delay of nine days, the 40-year-old respondent did not have the money to go to a doctor and thought that her condition would improve on its own. She had to borrow money and a vehicle to go to a doctor for treatment. Her husband had also been ill for five years with severe gastritis. She lived in a remote village.

A 55-year-old respondent, a widow, got treatment only after her neighbour fetched the compounder. Her only source of income was her husband's monthly pension. A notable aspect was that despite two sons living with her, she was at the mercy of her neighbours to call the doctor when she was unwell. This neglect suggested her low status

and her not being considered a "productive" member of the household.

It was observed among all the female respondents that the perceived severity and the tendency to delay seeking treatment in the hope of getting better had a very significant role in guiding their treatment-seeking for malaria. This contributed to the delay as illustrated by a 40-year-old woman, "I sought treatment after four-five days as I initially thought I would get better. Although I did take medicines from here and there, privately out of fear of falling ill and not being able to take care of my children, I finally went to a private doctor at a distant place since the medicines available at the sub-divisional hospital are not good."

A 35-year-old respondent who took medicines after two days from a private doctor outside her village said, "My condition did not improve after treatment there. My husband then took me to a private doctor outside Gomia. As I had complained of chest-pain, an X-ray was done. No blood test was done for malaria. He gave only medicines. I was given saline water after I came home. I felt better. I also had had a traditional healer (*shokha*) conduct some prayers for the first two evenings since the onset of fever."

The tendency to resort to home remedies or visit an *ojha* / *bhagat* / *shokha* before seeking private treatment, especially treatment outside the village, was common among women. This was done as a first step in many cases. A 40-year-old women said, "I first, went to a traditional healer and drank *chiretta*¹⁰ for two days but when it didn't help my son called the compounder, who doesn't visit on his own. He took my blood sample for test and gave me medicine for two to three days and an injection. After three days I felt better but my cough persisted. So I was prescribed a cough syrup by him. Eventually, my condition improved after having that."

4.4.3 Pregnant women

While a delay in seeking treatment did occur among a few pregnant women, the common trend observed was that treatment was sought within two-

⁹ Triple burden includes the productive, reproductive (care of children and family members), and the burden of household work

¹⁰ *Chiretta* is used for treatment during fever. The herb along with the root is ground and made into pills. It is taken twice a day on empty stomach. It is widely available in the forests. It's water after boiling and soaking overnight too is taken as medication. It is also mixed with *neem* (*azadirachta indica*) and taken in the form of *goli* (pills).

three days mainly out of the fear of loosing the child. In two cases the delay stretched to 8-10 days and a period of 15 days. Varying contexts among different respondents resulted in this delay: perception of how serious their condition was and which pregnancy malaria was experienced in.

One respondent sought treatment only after 15 days because of other illnesses in the family, due to which her health was neglected. Her husband and father-in-law too had fever at the same time. She had malaria during the sixth month of her pregnancy and it was prolonged until her delivery. Subsequently, she gave birth to a stillborn. The woman, aged 24, said, "I did not take any medicines for 15 days. Only when my condition became very serious, as I was unable to eat, my husband took me on a bicycle to a private doctor in-Gomia. I visited him thrice. The medicines given were very strong."

One respondent aged 22, who delayed treatment for two-three days said, "I did not go immediately for treatment, as it was not serious. We had money but my husband thought that I would be all right. I finally went to a compounder after two-three days and took medicines for one month. When it did not improve I visited the health centre and recovered after taking medicines for 15 days."

A notable feature was that pregnancy, particularly the first pregnancy, did act as an enabling factor in making decisions about health-seeking. One respondent, aged 20, who had malaria in her first pregnancy, narrated her treatment-seeking as follows, "I went for treatment after two-three days. My in-laws asked me to seek treatment immediately. However, I waited for the fever to subside. Then fearing something might happen to the child, I approached a lady doctor and took treatment for malaria for three months continuously. I was given medicines so that nothing happens to the foetus."

The following section summaries the commonalities and differences across these groups.

4.4.4 Some commonalities

- Age was an important determinant in the entire experience of the illness and health-seeking behaviour, and increased vulnerability to repeated morbidity.
- Non-availability of proper treatment at the government health centres or hospitals

compelled them to seek recourse to the local compounders with ad-hoc treatment.

4.4.5 Some differences in health-seeking across men, women, and pregnant women

- The trend of delaying treatment was much more striking in the case of women as compared to men. While poverty hindered both women and men from seeking treatment, the heavy burden of work in and outside home, their role of "care givers", and limited access to cash led to low prioritisation of health-seeking behaviour and "investing" in health among women. Further, the necessity of being accompanied by another person to the hospital/health centre and the inaccessibility of distant services had a particular bearing on women's health-seeking behaviour.
- There was a greater reliance of women on the local compounders as these were easily accessible and gave treatment on credit. In contrast men could approach a private clinic or pharmacy and purchase medicines. Only two out of the 14 men waited for visits by the compounder. Pregnant women were more particular about visiting a doctor when able to do so than completely relying on the compounder.
- A belief in supernatural forces determined health-seeking behaviour. Women were found to seek recourse more from traditional healers as compared to men. Two reasons can be drawn for such behaviour: a) It was a cheaper form of treatment; b) The tendency to associate illness with supernatural forces was common. Tensions and unrest within the family were associated with the breakdown of the family due to the evil eye. Thus women spent some money on *ghar bhadhna*.

Research on health-seeking behaviour clearly shows that the socio-economic status of households affects the utilisation of health services. Mc Combie's (1996) literature review shows a large variation in treatment-seeking patterns ("hierarchy of resort"). Studies have also shown that the attitude of health service personnel influences the utilisation

of health services. Disinterest on the part of the personnel deters people from seeking treatment.

Lobo's study (2003) also found that people believe that medicines given by the Female Health Worker (FHW) are outdated and hence not effective. The private doctor in the village on the other hand was believed to be giving medicines from a good medical store and this was cited as one of the reasons for preferring a private doctor.

Given the high occurrence of malaria and the reporting of a high number of mosquitoes in the houses of the respondents, the preventive measures that the respondents adopted are briefly summarised as follows:

- Use of *dhua* (smoke): by burning dung cakes (*goitha*), *mahua* leaves, rice husk, twigs and seeds of the *mahua* fruit.
- Use of mosquito nets
- Use of coil/spray
- Use of oil
- Use of hand fan/ceiling fan

The use of mosquito nets as a preventive measure was the lowest and the primary reason given was the inability to afford it. A single mosquito net costs Rs. 70-90. One respondent possessed a single net and therefore no one used it. Two male respondents reported using nets for themselves while the women of both categories reported use of mosquito nets by the family. "Smoke" as a preventive measure was used the most. As a preventive measures, no DDT spraying was reported in and around the villages covered. Only one or two respondents reported spraying conducted five-six years ago.

The strong physical and psychological impact caused by frequent experiences of malaria fever amidst most of the respondents is covered in the subsequent section.

4.5 Physical impact of malaria

The accompanying physical and psychological impact of malaria also contributed significantly in defining "severity" and consequently shaping the respondents' experience as negative. The physical burden associated with malaria was clearly articulated by all the respondents. Malaria was characterised with several associated complaints that severely impacted the respondent's well-being and

"productivity." These included severe weakness, complete loss of appetite, head and body aches, vomiting, unconsciousness (dizziness), and irritation.

While talking about the physical impact of malaria, chronic weakness and vertigo were more commonly reported among women than men. Among pregnant women, chronic and severe weakness was reported in all cases. Their physical impact was mainly defined by the outcomes of pregnancy: miscarriages, stillbirths and complaints associated with pregnancy. A loss of appetite was perceived as an important indicator and a factor contributing to weakness in general and low-birth weight in particular in pregnancy. Since poverty was a cross-cutting factor among all respondents, the usual diet was restricted to *maar* with rice or occasionally *roti*. Only three male respondents and one female respondent had vegetables and milk during malaria.

4.5.1 Men

Among the 14 men, two specifically complained of weight loss while eight complained of severe and persistent weakness as an outcome of malaria. The men who reported weakness associated it with their inability to perform heavy work and feared a relapse of the malarial episode. A 40-year-old man said, in a typical account of the physical impact, "When I had malaria, my diet had really reduced. I was unable to eat anything and would vomit out everything. For three days I did not feel like eating anything. So there is bound to be weakness. That's how I have gradually become very weak. I was unable to fetch wood from the forest because to cut wood one needs lot of strength. I didn't go, so I didn't earn"

Besides the physical health consequences, one particular case brought out the mental trauma and frustration of a respondent who worked as a stone crusher and earned a meagre Rs. 1000 per month. Dire poverty, inability to earn/work, sheer frustration of the disease burden, and morbidity in his house are reflected through this 37-year-old man's experience: "When I got fever with chills, my whole body started aching. I got fever while I was at my workplace and fainted there. My wife had to bring me home. I became very serious. I was unable to eat or drink...only had water and vomited that out too.

The fever remained for a few hours after which I would be all right. Then I could work. Once at home, I would again get fever at frequent intervals. Two of my children were also suffering from malaria. When our condition did not improve with the local doctor we went to the government health centre where we were given tablets. On our way back home I was shivering a lot and was unable to board a bus. So out of anger I took four tablets (double dose). I wasn't able to get rid of the fever, so I decided whether I am dead or alive I will continue to take four tablets at a time. While my fever went, I developed rashes and sores between my fingers and severe itching in my groin area. I had problems moving around and was unable to urinate too. My genital area got completely swollen."

This case reflects the sheer helplessness of a respondent who had previously lost four children due to fever and dysentery. Two other children were suffering from malaria. They did not have a steady source of income and his wife was pregnant and the family had to cope with the additional burden of illness due to malaria. The overdose of medicines worsened his capacity to work and impacted his earning as he had to rest for 15 days due to the side effects.

The inability to work, to, for example, collect firewood or to plough the field, are part of the physical impact caused due to malaria. As pointed out in the section on experiences, women associated overwork and lack of rest as the cause of frequent relapse of fever.

4.5.2 Women

While women made general references to the capacity to work, they specifically spoke about the health consequences. Almost all 14 women reported severe and persistent weakness as an outcome of malaria. This was closely linked to inadequate food intake/ poor diet and resulted in unconsciousness, dizziness, and vertigo. For women, the burden of continuing household activities/ "duties," their inability to do paid work, and their prior health condition exacerbated the weakness associated with the experience of malaria.

One woman, aged 35, talked about the impact of malaria that became particularly severe due to the burden on her: She said, "During malaria

I do not feel like eating anything. My mouth was completely bitter. I use to throw up whatever I would eat. I used to hate noise and any loud sound would make me angry. I couldn't stand light...I felt irritated all the time I had many problems because of the weakness I suffered ... I had grown very weak even after recovering from malaria. But I had to carry out all the household chores of cooking, washing, taking lunch for my husband to the coal mine that is at a distance of half an hour. I fetch heavy loads of water from the river. I still feel breathless while climbing the hill towards the river but have to go because there is no one else. I get extremely tired by the end of the day. Mother-in-law cooks occasionally but rest of the work is done by me."

This woman was the sole respondent who expressed irritability with light and sound, -gastritis, weakness, and vertigo as complaints associated with malaria. Due to her weakness and inability to work, she was also harassed and rebuked by her mother-in-law for resting. This coupled with the fact that she received less attention because of her husband's illness (who also had malaria and throat pain) could be the reason for her irritation and presentation of a severe case of malaria.

The impact of malaria was understood in the context of not only the physical, but also the social and psychological health consequences. Women faced tremendous difficulty in continuing household work. Household demands, burden of work falling on the other female household members resulting in tensions and strain within the family, and medical expenses causing constraints caused immense indirect burdens on the women. Women complained of chest pain and "tension" (*chinta*) and expressed these as outcomes of poverty and prolonged illness. One of the main factors for the psychosocial impact was the tensions and strains experienced within a household because of expenditure incurred due to illness, and the inability to do household work. This has been covered in the section on economic burden and care and support.

4.5.3 Pregnant women

The dietary pattern at the time of malaria was of particular concern in the context of pregnant women since they were required to meet the additional demands of the growing foetus. A World

Bank study (1996) mentions that special dietary arrangements are not made in the case of pregnant women and even if a husband brought something special it had to be shared with the rest of the family members. [47]. Thus her diet is also depends on what her husband/in-laws permit her to eat. According to this study, women may be malnourished because of poor nutrition as well as because their systems are "unable to absorb iron effectively owing to intestinal parasites or malaria." [47]. Given the employment and livelihood patterns as discussed in Chapter 2, women are more vulnerable to seasonal fluctuations of food availability that in turn affect their health. Pregnant and lactating women are likely to suffer, often losing weight during seasons of the most severe deprivation.

Among the pregnant women interviewed, diet varied from *maar* alone to *maar*- rice and *rotis*. A few respondents rarely consumed fruits. One pregnant woman aged 24, who had malaria in the third month of pregnancy, reported that she only had water during malaria and vomited out that as well. One woman reported loss of appetite from the fifth month of pregnancy and had some fruits occasionally. She had malaria in the sixth month, which worsened her condition in the subsequent months of pregnancy.

One respondent aged 18 who reported two episodes of malaria in a single pregnancy said, "I did not feel like eating anything when I had malaria during pregnancy. Only drank *maar*. If I attempted eating rice I would vomit a lot because of which I became weak. Only after delivery did I stop vomiting".

The physical impact of malaria to some extent was intertwined within the experience of malaria as illustrated through the earlier narratives. Rest and diet were strongly linked with the extent of support from the natal family, apart from the overarching factor of poverty. One respondent, 24 years old, narrated her experience of the physical impact of malaria as, "I couldn't even wash utensils. My hands and legs would ache. I couldn't even wash my face. I remained like that for 12 days without doing anything. For three months, I had *maar*. The fever lasted for four months during the post monsoon period."

The above respondent was married at 10, and had already had four pregnancies. In her fifth

pregnancy she had malaria in the sixth month. She gave birth to a stillborn. As highlighted earlier, the negative impact (for example, low birth weight babies) caused by malaria during pregnancy was clearly linked to an imbalanced diet. Women too reported negative outcomes of pregnancy through stillbirth and miscarriage. Past reproductive histories in both categories of women impacted a great deal on their present morbidity.

However, while high poverty was found among both women and men, the subtle ways in which gender interplayed with diet were quite revealing. Women's low status within the family, limited access to cash and purchasing power, and the neglect of her food and health needs prevented a woman from having a proper diet or choice of food during malaria. In contrast to this, during malaria, in at least four cases, either men were fed or they themselves bought their choice of food from the market to "change the taste of the mouth." The following narratives of a male and female respondent with similar household income levels (Rs. 1200 per month) illustrate the advantage and edge men had over women in dietary intake.

A male respondent, aged 28, said, "When I felt better, I felt like eating meat. So, I went to the market and bought myself a chicken. After eating well, I started to work. If I don't eat meat I can't get strength to do hard work. How will I be able to fell trees in the forests?" The respondent was the sole earning member of the household and better situated to fetch food for himself. However a common response among women was echoed by a 55-year-old respondent, "We don't have anything to eat....neither rice, paddy nor money to buy these. So what could I eat? How could I get better? I couldn't even get *maar*-rice to eat. I somehow managed to save my life. There's no security of food, so how could I feed myself that time. I did not feel like eating anything."

It is important to note that the respondents never complained of the quality of food grains available through the Public Distribution System (PDS). Instead non-availability of food grains or the location of the PDS centres were common complaints among men and women and not so much from the pregnant women because they were not from the population below the poverty line. A limited access

to the PDS and subsistence farming among only a few respondents raises the need for food security in this area.

4.5.4 Gender differences reflected through the physical impact of malaria

- Men reported an inability to earn due to illness while women were compelled to continue with the household work. They reported weakness (*kamjori*) caused by the illness, overwork, drudgery, and inadequate food and rest.
- During pregnancy women need to double their food intake for the growing foetus. Pregnant women experienced a complete loss of appetite due to malaria. They reported low birth weight babies due to poor or low food intake. Their reproductive biology further compounded their vulnerabilities.

4.6 Economic burden of illness and coping mechanisms

Besides the physical burden experienced, malaria posed an increased economic burden on the household for treatment and for recovering the loss of productive days. In a context where the socio-economic conditions are already so poor, this triggered a vicious cycle of illness, credit, indebtedness, and poverty, subsequently resulting in chronic ill-health. The narratives below illustrate not just the costs endured but also the deep social and psychological stress that the respondents underwent during period of crisis.

The level of expenditure on treatment of malaria rested on other factors such as the excessive economic burden due to other major illnesses or a marriage in the family. With a heavy reliance on the private sector for treatment, health expenditure ranged from Rs. 100 to Rs. 10,000. In order to mitigate such crisis respondents resorted to different support systems. Some of them were:

- borrow money without interest (*paicha*) from neighbours, friends, relatives
- borrow money on interest (*karza*)
- sell livestock
- mortgage or sell land
- pawn (*bandhik*) valuables like silver jewellery or bicycle
- family support (natal family, sons employed outside)

Table 4.6 provides the economic background of the respondents interviewed. This table reflects the abysmal conditions in which the respondents managed their daily expenses. In some cases men did not report their spouse’s role in supplementing family income. The figures provided were self-reported by the respondents, thus there might be discrepancies in reporting as earnings drawn from, for example, forest produce or livestock, were irregular.

In some households, some form of extra earnings was visible through selling of forest products, rearing of livestock, pigeons etc., but with a family size of four-five members the monthly income was very low. Some families practiced subsistence farming. The food grains produced depended on the size of cultivable land and usually lasted for four-six months for a family of four-five members. Given such economic conditions, the following sections seek to examine the economic burden of malaria. It further examines the coping mechanisms and support systems during the time of illness.

4.6.1 Men

As evident from the health-seeking behaviour of men, expenditure was possible with men having greater mobility, access to cash, and decision-making power. From among the male respondents, four borrowed money on *paicha*, one from his wife’s natal family, one from his employer,

Table 4.6: Household income distribution among respondents (in Rupees)

| Categories | Less than 500 | 500-1000 | 1000-1500 | 1500-2000 | 2000-2500 | 2500+ |
|----------------|---------------|----------|-----------|-----------|-----------|-------|
| Men | — | 6 | 7 | 1 | - | - |
| Women | 2 | 5 | 2 | 3 | 1 | 1 |
| Pregnant women | 1 | 1 | 1 | 3 | 1 | 4 |

Source: Fieldwork, Gomia

four managed themselves, one was supported by his father, one mortgaged his bicycle, one pawned his wife's jewellery, and one did not spend much money. Among men the expenditure on malaria treatment ranged from as Rs. 40 to Rs. 2000. Three men spent less than Rs. 100 on treatment, of which two did not have the money to spend on private treatment and therefore relied on the compounder. One 40-year-old respondent managed by taking *chiretta*. His four-year-old daughter too was suffering from malaria. He said, "During illness only there are expenses." Another respondent aged 18 spent only Rs. 40 for three days' medicine as he bought medicines immediately from the market.

A 48-year-old respondent who had a relapse of malaria ended up spending Rs. 1500 on his second episode because he delayed seeking allopathic treatment. He had depended on *chiretta* as he was already undergoing heavy expenditure due to his son's illness. This delay aggravated his illness and increased his expenditure. In his previous episode, he had spent Rs. 400 on treatment from a compounder. He said: "Once you seek a doctor Rs. 100-200 is nothing. I cannot recount the total expenditure. In the first episode I would have spent at least Rs. 300-400 and Rs. 1500 in the second episode".

Three men aged 33, 40 and 60 spent about Rs. 150-300 on treatment. These men managed their expenses by borrowing from friends or neighbours on *paicha* (loan without interest). One of them, aged 40, had earlier experienced heavy expenditure due to his wife's illness. His wife, for fear of conceiving a girl child for the fourth time, as told by the *dai*, underwent an abortion using traditional medicine. This complicated her condition for which they incurred high expenses. Apart from taking a loan, they had to pawn their assets like jewellery and a bicycle at an interest rate of 10 per cent. He said, "I have a family of seven-eight members. Today someone falls ill, the next day someone else".

Five men had spent between Rs. 500-650 to as high as Rs. 1000 for malaria treatment. Among the four who had spent an amount of Rs 500-650, one had solely taken money on *paicha*, one, aged 24, was helped by his maternal uncle and had also taken *paicha*, one respondent aged 23, who belonged to a very poor household, had to pawn his

cycle and his wife's *sikri* (silver chain). Another respondent, 28 years old, sent his wife to pawn her jewellery that she got as dowry. His wife also borrowed money from her sister. They were burdened with other illnesses in the family. He spent Rs. 500 on his treatment. One respondent aged 30 did not spend money on treatment because he visited a government hospital. There are no compounders in his area. He instead purchased vitamins worth Rs. 500 in order to overcome his weakness. He did not experience a severe episode of malaria.

Interestingly, two respondents who had spent Rs. 1000 on treatment had received help from their wives' natal families. In the case of both these respondents, their wives families had supported them during treatment for their earlier illnesses, when the expenditure amounted to as high as Rs. 6500. In the case of one respondent, his brother-in-law had taken him for treatment. He stayed at his wife's natal family during ill-health as their house was situated near a government hospital.

One respondent, aged 26, who experienced frequent relapse of fever spent as much as Rs. 3000 on treatment. He lived in a forested area and worked as a stone crusher. He lived in a joint family and received help from his father and brother. He said, "When I had malaria, the compounder charged Rs. 50 for each visit apart from Rs. 500-600 for medicines. I had to take medicines every month. So I must have spent around Rs. 3000. I have no regular income, so how will I have any savings. At the time of illness, I have to arrange money by taking a loan from my own or nearby villagers. If the illness persists, I have to even mortgage a small plot of kitchen garden or pawn family member's asset."

4.6.2 Women

In the case of women respondents, five took loans on interest, four were helped by their husbands, two got natal family support, two borrowed money from a contractor and a village leader, one managed from savings, and one refused to give this information. Three women respondents spent Rs. 100, 150 and 200 on treatment from the local compounder. The woman who spent Rs. 150 had to borrow Rs. 50 from a villager for treatment. She then sold coal to clear her debt. She was burdened with her husband's illness for the past 12 years. She had

collected money from her village, taken help from the local leader, and had received some conjugal family support. The other two respondents had relied on the compounder (who visited the village) only because they could get treatment on credit. Increasing indebtedness to these compounders compelled them to work for longer hours. A 40-year-old respondent who belonged to a Birhor tribe, said, "Private doctors do not give medicines on credit. We take medicines from the compounder and once we make money by selling rope, we repay him. Who will give us a loan? We are just indebted to the shopkeepers."

One respondent, aged 36, who spent Rs. 250-300 on malaria treatment had undergone an expenditure of Rs. 800 for a check-up as she had complained of chest-pain after taking medicines for malaria. Her husband worked as a labourer. They had earlier spent Rs. 2000 for her husband's operation (hydrocele). They still owed the private doctor a sum of Rs. 300. She said, "When we have some earnings, we use the money for medicines. Otherwise, we take *paicha* or borrow money from the contractor at the brick-kiln (place of work)."

Six women spent a sum of Rs. 400-500 on malaria treatment. Two women aged 55, both widows, had different experiences. One spent Rs. 200 from her own savings and got Rs. 300 from her daughter. The other had to borrow money at an interest of 10 per cent. She had no source of income. Her son was unemployed and suffering from tuberculosis. The former had some money in the form of her husband's pension. He used to be an IEL employee.

Of the other four respondents, one, aged 40, had to borrow from her sister's husband, an amount she repaid after her son, who worked outside, sent home some money. Another respondent aged 35 and her husband were both suffering from malaria. Her son gave money for their treatment. They sought treatment from outside their village after four-five days. The other 31-year-old respondent spent around Rs. 450 from household earnings.

Another woman, aged 40, spent Rs. 500 on private treatment. Her daughter too had had malaria on which she had spent a sum of Rs. 1600. She had also spent a lot on her niece's marriage. They had

utilised most of the household income (through selling coal) on her husband's treatment for 12 years. She had to pawn her jewellery; her three sons had to drop out of school due to their father's ill-health to support the family earnings. She now sold country liquor for Rs. 10 per bottle to bear the costs of sending her two younger children to private school. She had six children. She said: "I am unable to fetch coal everyday, I get tired. I work for only 10-12 days in a month."

Women also faced an economic burden within the household apart from that caused by other illnesses, due to expenses undertaken for their daughter's wedding. One respondent aged 40 years had to spend Rs. 1000 on private treatment at IEL hospital. Her husband too had fever during the same period but he continued going to work. He worked at IEL as a contractor. She said, "My husband told me that we need to take a loan in order to bear the expenses. He would get very angry with me especially when I would rest."

Like the above case, another respondent aged 40 years who spent Rs. 5000 on her treatment said, "We had taken a loan of Rs. 5000 on an interest rate of Rs. 10 for Rs. 100. It came to about Rs. 500 per month. My son cleared the debt. My son told me that I shouldn't enter the store, as the grains would get spoilt. He said so much money has already been spent on you, so we can't afford to waste our produce. The moneylender beats and harasses me. He says he wants his money back. Had we had any land we would have sold it. But we can't do anything except listen to him. Regarding treatment my husband used to say that he won't be able to help me spend money on my medicine/injections anymore. He said, 'I will be able to spend till Rs. 5000. I will be unable to make you recover'."

A decline in the "productive capacity" due to ill-health and as a consequence the economic burden caused by it increased mental stress and strain. Expenditure on prior health conditions added to the burden on the treatment costs. A 27-year-old respondent spent over Rs. 2000 for her malaria treatment. She had also suffered from chest pain and asthma. They managed by borrowing money from here and there. She received a lot of support from her natal family. Her sister and brother helped a lot. Her son suffered from epilepsy during infancy for

which she had to pawn her jewellery. She was unable to attend to her own health (she underwent a tubectomy) because of her son's illness and subsequently she had malaria. They incurred huge expenses due to her previous illness of asthma later followed by malaria that resulted in severe weakness. Her husband said that they spent nearly Rs. 10,000 on her treatment of asthma and malaria, which included Rs. 300 for injections and Rs. 100 per week on medicines.

She said, "In the private clinic where I went, they charged a fee of Rs. 40. Each injection costs Rs. 100 and the medicines were separately charged for. We had a lot of problems as we incurred so much expenditure. I took support from my sister and brother. My husband keeps repaying the loan while working...we somehow managed by taking loan or by pawning jewellery."

Indebtedness was common among all and higher among men and women as compared to pregnant women. Health expenditure took away a major share of their earnings. Unlike men the women were unable to borrow money without interest in and around the village. This indicated that mobility and the decision-making power were with the male members of the household.

4.6.3 Pregnant women

Pregnant women incurred relatively higher expenditure on malaria treatment as compared to women in general. One of the main reasons was the fear of complications during pregnancy and its negative outcomes. Health care expenditure was directly related to the economic condition of the household and the extent of social support system.

Two respondents spent between Rs. 150-200. A 24-year-old respondent spent only Rs. 250 for treatment and delivery. She was suffering from malaria and jaundice. She complained of night blindness during pregnancy. She belonged to a very poor household. She borrowed money (*paicha*) from her neighbour, which she returned after a month. Another respondent aged 25 spent only Rs. 150-200. Her mother took her for treatment and paid for it. She was the second wife; her husband married her for a son. Although his earnings from a job at IEL were quite high (Rs. 6000 per month), he did not support her. She managed to earn some money by selling coal.

A young respondent aged 18 experienced a relapse of fever in her first pregnancy. She spent only Rs. 70 in the first and Rs. 240 in the second episode. The local compounder treated her. She did not receive support from the natal family support. She had visited them twice after marriage and they lived very far, she said. Her husband worked as a labourer and spent on her treatment. Another respondent, aged 20, got malaria during her first pregnancy and spent Rs. 500 for treatment at IEL. Her in-laws spent more than Rs. 2000 during her illness and pregnancy. She belonged to a better-off household; her husband was unemployed but her father-in-law worked at IEL and earned Rs. 6000.

Another respondent, 24 years old, spent Rs. 1800 on her treatment. The family took a loan on interest. During the period when she was unwell, her father-in-law and husband too had fever, so she did not receive much care. Her father brought her to her natal home where she stayed for 18 days. She was married at the age of 10. She had had five pregnancies and during her fifth pregnancy, when she had malaria, she gave birth to a stillborn. Nobody helped her in the household work. In a previous pregnancy she had delivered while working in the field.

A 19-year-old respondent spent Rs. 500 for malaria treatment and Rs. 1000 on a traditional healer (for *jhaar phuk* and *ghar bhadhna*). Her husband paid this entire amount. The *shokha* had restricted her mobility during pregnancy so she could not visit her natal family.

Early marriages and repeated pregnancies also reflect that the reach of Information, Education and Communication (IEC) activities is negligible in these areas. Two respondents, who spent around Rs. 3000 for malaria treatment, received some form of natal support. A 31-year-old respondent, who experienced frequent relapse of fever, received continued support from her brother as well as her husband. She said, "Whenever my brother would visit he would give me Rs. 250-500. Once he gave me Rs. 1000."

One respondent aged 30 spent about Rs. 4000-4500 for malaria treatment. During the pregnancy her husband's household income supported her. This was her fourth pregnancy. She had lost a daughter who had been 10 years old. She wanted to have a girl child as she already had three

sons. Her father was unable to support her as he had already incurred heavy expenditure on his daughter's marriage and son's education. Her husband had no regular employment. He would oversee his father's vehicle that was used for transporting material. This was the only source of their household income. She had faced lot of difficulties in the house as her mother-in-law would constantly harass her by saying, "What kind of fever is this where you spend Rs. 2000-3000?"

Another respondent, aged 23, did not receive any help from her in-laws. Overall she had spent Rs. 6000 during her pregnancy. Her husband borrowed money at a monthly interest of about Rs. 500-600, which they had not paid off. She had a miscarriage earlier.

Another 23-year-old respondent had undergone high expenses due to hospitalisation costs when her condition became severe because of malaria and jaundice in her third pregnancy. She had a miscarriage in her previous pregnancy. She was hospitalised for treatment in her natal place. She said, "We spent Rs. 10,000-12,000 on treatment. The hospital bill was Rs. 6000. We also spent Rs. 100 on *jhaar phuk* and Rs. 500 for *ghar bhadhna*. Most of the expenses were borne by my in-laws. What my mother spent is included in the household expenditure. Whenever my mother came over to see me, she gave me Rs. 1000. Travel expenses to the hospital and the doctor's fees for each visit were always paid by my mother. Expenses on food were borne by my mother and my in-laws and husband gave cash. We had taken a loan of Rs. 1000 from a neighbour on *paicha*. We help each other in times of need. Our friends gave us Rs. 2000."

It was interesting to note that although her in-laws did provide her with cash, higher expenses were borne by her mother, through payment of fees, travel costs, and most importantly, care and diet. Overall three pregnant women received help only from their natal home.

Some of the expenses included money spent on those visits and occasional antenatal check ups. One respondent aged 19 said the break-up of her expenses was: "For blood test the charge is Rs. 80, for urine test it is Rs. 50. I spent a total of Rs. 1000 on the *shokha* and on the rituals conducted. I spent Rs. 150 on the local compounder. Since the time of

conception, I have spent Rs. 2000 on treatment. When I would go for check-ups I spent Rs. 200-300 for each visit."

4.6.4 Specific findings

- A common factor that affected the health-seeking behaviour and the expenditure on health was the economic burden caused due to other illnesses and marriages expenses within the family.
- Overall, increasing indebtedness compelled respondents to work for longer hours in hazardous occupations like fetching coal and stone crushing. Rope-making, for example, done mainly by women of the Birhor tribe, involves bending for long hours.
- There were two ways of coping with the crisis: (a) by working longer hours and (b) by reducing their food intake.
- From calculations based on the sex-disaggregated data on the expenditure incurred on malaria, men were found to be evenly distributed in the entire range of expenditure categories (Rs. 100-250, 250-400, 400-600, 600-800, 1000-1200, and Rs. 2000 and above) while the majority of women were clustered in the lower range. This clustering effect is because of the reliance on the compounders who visit the villages or come "on call" and charge Rs. 50-100 for each visit.
- Access to cash (through *paicha*) was a means of coping immediately with illness by purchasing medicines from chemists or private clinics. Women spent on the compounders where they paid for treatment on instalments.
- Non-availability of proper treatment at the government health centres and hospitals compelled people to seek recourse mainly through the local compounders.
- Men, who incurred higher expenditures, were found to be dependent on their wife's natal family for support during malaria and other illnesses. Nevertheless, lower expenditure among men was also marked by the fact that men could seek immediate treatment.
- Women reporting indebtedness had already incurred prior indebtedness caused by the marriages of their daughters or nieces. This

clearly highlights the social burden that women carry.

- Among women, dependence on the natal family was more pronounced till the age of 27. Women in the 35-40 age group depended on their husbands for monetary arrangements as compared to pregnant women who in the sample size were mostly in the younger age group. Five women respondents were 40 years of age.

4.7 Care and support

The extent to which an individual could spend and cope with an illness or crisis was largely dependent on the support and care received within and outside the family. Care and support is understood as care given during the period of ill health, where the respondent was, for example, allowed rest, oil-massaged, and given medicines. Support includes financial support and in the case of women help provided in all the household work.

4.7.1 Men

It was found that there existed more than one care provider at home for men. Nevertheless the maximum burden of care fell on the wife. Of the 13 men who responded, 10 had their wife nurse them besides others like their mother (in three cases), sister, father and son. A 33-year-old male respondent said, "My wife took care of me when I was unwell. I would not work during that time. I would remain in the house. I took complete rest for around 8-10 days."

A respondent aged 26, who lived in a joint family and spent about Rs. 3000 on treatment said, "At home my mother, father and wife would take care. During fever, I used to stay at home and I was not made to do any work. My brother and father used to bear the expenses."

Another respondent aged 37 took 15 days rest and his wife took complete care of him. A 24-year-old respondent sent his wife to pawn her jewellery and then bought medicines privately. He said that his wife would massage his body and give him medicines. His mother and grandmother also took care of him. His paternal aunt who lived in the neighbourhood also attended on him. Similarly, for a 48-year-old respondent, his wife, mother and daughter all took care of him. His relatives also came

to see him. In the case of a 42-year-old respondent, his brother-in-law came and took him for treatment. His wife's natal family had supported him for his other illnesses.

As exemplified here even among the male respondents a part of the burden of illness was shared by the in-law's family by giving money/ loan for treatment and/or accompanying them to the hospital and getting treatment as in the case of a 28-year-old respondent who said, "We arranged money by taking a loan without interest from my sister-in-law's husband. I also pawned some utensils and jewellery. I couldn't move around. My wife had to pawn the items. She only approached her sister for money."

4.7.2 Women

In terms of care and support for women respondents suffering from malaria, the provision of care and the burden of the household invariably fell on the female family members. Out of the 14 respondents the burden particularly fell on the daughter (nine), niece (two) and daughter-in-law (two). Daughters were as young as eight years and performed all the household chores besides providing care to her mother by giving her medicines, oil massage, and meals at proper times. Only three women received some form of support from their husband and one from her son.

One 27-year-old woman said, "When I was suffering from malaria, my daughter who is nine years old took care of me. She saved my life. She did all the household chores, fetched water and cooked food. My mother-in-law and brother-in-law's wife had left me to my fate. Then my natal family took me home. Otherwise, I would have been dead by now."

The burden on the daughter was pronounced for some when mothers fell ill. A woman aged 40 said, "My 8-year-old daughter nursed me when I was down with malaria. She fetched water, cooked, oiled, and gave medicines. What will the sons do? They fetch coal and roam around here and there. But how can sons fetch water from someone else's well? Will they not be ashamed to go to another well? For the daughter, it is her work."

Girls were usually not sent to school so that they could take care of younger siblings. A common notion that boys could not fetch water increased the burden of work on the younger female members.

One woman respondent aged 35, from an economically better-off household, who did not have to take a loan, spent Rs. 1150 on her treatment. Her daughter (12–15 years) and husband took care of her. She said, "He took good care of me. He also gave an oil massage. My daughter would do all the household work – cook food, fetch firewood, water, and coal from the riverside. She would get very tired. How much could I tell her? So mostly my husband took care after he got back from work in the evening."

During illness women also experienced a lot of harassment by family members, who complained that they were neglecting their household duties and were responsible for the increased economic burden of the household. A woman aged 40 said, "Even while I was down with malaria fever I had to fetch water and do the other chores. Since my daughter and daughter-in-law had gone to their home, there was no one in the family. It took a long time to walk to the river...I use to go slowly and take rest in between. Since I took time, my husband and son used to scold me. He said, 'You keep on resting. I can't bear your treatment expenses anymore. I have already spent so much on you.' The moneylender beats and harasses me. He wants his money back. Had we had any produce, we would have sold it and repaid him. When my husband was ill I took him to a hospital outside the village and helped him to recover. I took care of him, sold off a cow and arranged money for his treatment. Now who will help me get better?"

The above case clearly highlighted gender-based difference in attitudes towards treatment, care, and support. Women as both "care providers" and as "malaria affected persons" bore the maximum brunt of illness within the household. In case of the former, their drudgery was compounded by the demands of the household and attending to the sick. Despite being ill they were unable to rest and were expected to continue most of the household work unless incapacitated. This was linked to the notion of the sexual division of work and the differential status ascribed to men and women within the household and in society at large.

A 35-year-old respondent who had to call her married daughter to take care said, "My mother-in-law would get very angry and tell others that I keep sleeping to avoid the household work." Another

respondent, 40 years old, said, "My daughter-in-law took care of me. Who else would? She would get very angry and say 'I have to keep doing your work'. Even my husband said that a lot of money has been spent on your treatment. Now we don't have money to spend on you."

Women in the 35-40 age group (five respondents were 40 years old) reported experiences of harassment by their husband, mother-in-law, and even children when they became incapacitated. This caused tremendous psychological stress adding to their already poor health.

4.7.3 Pregnant women

In contrast to women with malaria, pregnant women with malaria were found to depend more on their natal family. Among the 11 pregnant women who were suffering from malaria, five were in their respective in-laws' house for the entire period, five visited their natal family during their illness, and one respondent did not disclose much about her experiences. From the five who had gone to their natal home for treatment and care, four went for a few days (four-18 days) and one respondent who was hospitalised and incurred very high expenses stayed in her natal home until the delivery. She received utmost care and comfort from her mother and sisters during the entire period of illness and delivery. She reported rest, proper diet, and treatment. All the four women who were in their natal home were brought there by their parents on seeing them unattended and serious in their conjugal home. All of them reported receiving rest, better care, treatment, and financial support at their natal home.

A respondent aged 24, who spent only Rs. 250 for treatment and delivery said she was taken care of by her mother after delivery. She said, "All the expenses were borne by my father. Expenses were not much, around Rs. 200-250 for tablets and injections. After delivery, my sister-in-law took some care of me for six days. Then my mother came and took care of me. She would oil me, wash my clothes...to what extent can a sister-in-law do this?"

Three pregnant women received some help from their husbands. In the case of 31-year-old respondent, her husband took her for treatment and helped her in the household work, and her daughter took care and gave her medicines during illness.

Similarly, a 24-year-old respondent who could not afford to revisit the private doctor received help in housework from her husband. Her mother-in-law did the housework only when she had fever. A 23-year-old respondent, whose case was detailed in the earlier section, and who incurred the highest expenditure, received help from her in-laws and husband apart from the enormous burden shouldered by her mother.

The other 23-year-old respondent who did not get much help from her in-laws said, "The entire treatment costs were borne by my parents. My in-laws did nothing. They would just stare at my face. There was no chance for survival. Had my parents not taken me away from here, I would have died."

One respondent, aged 24, was helped by her niece in household work as two other members in the family were also down with fever. A respondent aged 19, who had a history of two miscarriages, said that it was a burden for her husband to buy medicines and injections. He took her for treatment and managed the costs. The village *shokha* had put a restriction on her mobility. She was unable to visit her natal family. Her mother-in-law and sister-in-law took care of her. She said, "They knew that I was unwell. How would they allow me to work?" On the other hand, she said, "I did not get much rest during pregnancy. My mother-in-law and others would say, 'the more you rest the more problematic it is'. Whatever was possible I would do."

Factors related to income, expenditure, and the hardships entailed are reflected in the social support mechanisms that exist for an individual. The absence of any form of savings such as, for example, a chit-fund, among the respondents interviewed, subsistence farming limited largely to paddy cultivation, and very few extra earnings, clearly reflected the precariousness of their living conditions.

A study conducted by the World Bank in the state of Bihar and Andhra Pradesh in 1996 highlights that health care expenditure acts as a barrier to savings. This study shows that bad health and expenditure on health were considered the key impoverishment factors. In the opinion of fisher folk in Sohrai, agricultural labourers in Pedd Kothapalli, and the women in Dorapalli in Andhra Pradesh, household spending on health was considered a major barrier to savings. [48].

4.7.4 Differences in care and support

- As compared to men, women faced greater social and psychological stress with the extent of expenditure caused by their illness. Men did not report having faced harassment or discomfort in the family.
- Ten men received more care and attention from their wives and other family members as compared to women. Only three women reported that their husbands helped them. For women, care and support usually fell on their daughters
- Men reported adequate rest for as much as 15 days unlike women in both categories. Only one pregnant woman reported eight days of rest during a relapse in her pregnancy.
- Pregnant women received some form of help from their mother and sister-in-law mainly during the time of malaria. Three received help from their husband. Four were taken to their natal family by their parents on seeing them unattended.

The present study clearly mirrors the extent of morbidity caused by malaria among the rural poor in Gomia, Jharkhand. As reflected in the experiences of men, women, and pregnant women, the narratives clearly illustrate that factors such as gender, pregnancy, and age make the population more predisposed to malaria infection. The larger socio-economic conditions interplay with these factors, thereby pushing a particular group further at a "heightened risk."

Malaria infection is considered higher among men and this was corroborated through the sex-disaggregated data on malaria cases. Higher case-reporting at the government health centres could be attributed to their perception of seriousness of illness, as well as access to cash and other resources, decision-making power, and greater mobility for men.

Although poverty was an overarching factor, gender interplayed and placed women in a more vulnerable position as reflected in their perceptions of severity of malaria and their health-seeking behaviour. Pregnant women were more vulnerable because of their reproductive biology and

because of gender dynamics within the female members of the household.

A striking distinction between the experiences of the two groups of women was that the pregnant women experienced a severe loss of appetite for a prolonged phase and believed the reason for the low birth-weight of the child was an outcome of their inadequate diet. They reported stillbirth and miscarriage as outcomes of malaria during pregnancy. Women in general received inadequate rest and diet and continued to perform household chores as compared to men, who reported adequate rest and care by their wife and other family members.

Men resorted to some form of immediate treatment, mainly purchasing medicines over the counter, as compared to women who resorted to cheaper and ad-hoc treatment through the local compounders and the traditional healers. The health-seeking behaviour of pregnant women and their

expenditure was strongly linked to the support received from their natal family. It was evident that they stayed or took help from their natal family only during the time of malaria and not during the entire pregnancy period.

Another important finding is that both men and women, despite being the head of the household at a particular age and in a specific context (for example a respondent who was aged 60 years and was a widower) were found to be dependent on their children for cash and treatment. This reflected on their treatment-seeking behaviour that included home remedies.

The ability to purchase vitamins, a non-vegetarian diet, and rest during illness were clearly linked to the notion of men's work as "paid" labour. Household chores were a routine that had to be performed by women. Wherever women received care and rest it was a burden upon other female family members, usually the daughters.

Chapter 5

Conclusions and recommendations

This study explored the interrelationship between gender and malaria among the rural poor in Gomia in Jharkhand, a state with a high prevalence of malaria and a large population below the poverty line. Using a gender lens it attempted to examine the experiences of men, women, and pregnant women by locating them in their existing socio-economic and health conditions that determine vulnerability to malaria. This qualitative study was based on in-depth interviews conducted with the respondents and was corroborated by the literature reviewed, and by secondary data on the malaria situation in Gomia.

Due to its geo-physical characteristics, occupations in Gomia are mainly based on natural resources such as coal mining, or work in forest, river and dam areas. This places the communities at greater vulnerability to malaria. Individual vulnerabilities could be traced through factors such as income, occupation, family size, living conditions, age, gender, and pregnancy that further determined susceptibility to malaria.

Poverty emerged as an overarching factor placing men, women, and pregnant women at a more vulnerable situation in an already endemic area characterised by a collapsing public health system with insufficient and poor quality health services at inappropriate locations; inadequate infrastructure such as *kuccha* roads, unclean wells, and stagnant water.

Further gender acted as a detriment for women and pregnant women by limiting their access to treatment, influencing their diet and ability to rest, and compounding their vulnerabilities to malaria. Women were found to have a significant but unacknowledged role in supplementing household income besides the household burden they faced. They were engaged in outdoor activities that were recognised, as was the men's work.

A gendered division of labour burdened women and young girls with various tasks both outside and within the house, such as fetching water. Even during illness, women continued with the household tasks including caring of other sick

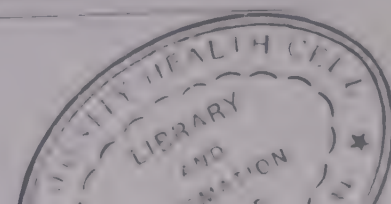
members. Young girls were not sent to school but were responsible for caring for younger siblings and doing household chores.

Reproductive biology has a severe impact on the experiences of malaria among pregnant women, as their state of compromised vulnerability is highly susceptible to malaria. Other aspects that emerged from these experiences as shaping their response to malaria were the economic burden of illness, ways of coping with the financial crisis, and the care and support that they received during malaria.

A striking distinction between the experiences of the two groups of women was that the pregnant women experienced a severe loss of appetite for a prolonged phase and attributed negative outcomes like low birth-weight of the child to their inadequate diet. They reported stillbirth and miscarriage as outcomes of malaria. Diet during pregnancy was often limited to *maar* rice. Pregnant women were unable to demand food supplements like fruits or milk.

It was interesting to note that the perception of "severity" of malaria was linked to the ability/inability to work. However for men it depended on "earnings," but women understood it through the difficulty faced in continuing with the household chores. Weakness was a common impact reported among all the groups but women complained of more severe weakness and vertigo as compared to men. "Severity" of malaria was compounded due to relapses as well as other illnesses such as jaundice following malaria.

Delays in seeking treatment were higher among women as compared to both pregnant women and men. Treatment depended on their perception of "severity" of malaria and was sought when they became incapacitated. Resource constraints placed women at further disadvantage. However, a fear of losing the child among pregnant resulted in some form of immediate treatment. Large family size, low income, and the burden of other morbidities within the family were some of the factors that impeded seeking treatment.



An important aspect in relation to the health-seeking behaviour was the economic burden that the respondents faced due to malaria. Some of the measures to cope with the costs were taking loans with or without interest from friends or neighbours; mortgaging household items; and taking support from the natal family. The burden (in terms of financial support and care) on the woman's natal family was very high in case of both women and men but was more pronounced among pregnant women. The decision-making power to mortgage or pawn assets or take loans was largely in favour of men. Mobility was an important factor in men's favour in seeking both treatment and credit without interest (*paicha*).

A high expenditure on treatment acted as a barrier to savings. For all the respondents utilisation of "savings" as one of the means of coping with the economic crisis was negligible.

The high cost of treatment not only pushed them into a permanent cycle of indebtedness, but the fear of the latter further inhibited them from seeking treatment. This was particularly true for women. The result was that they did not seek treatment until the illness became serious.

While the services provided in private hospitals/clinics were not adequate, they at least had the capacity to provide basic minimum treatment. However the repeated burden of illness and heavy expenditure incurred on private services resulted in severe indebtedness.

The government health facilities, on the other hand, were in such a pathetic state that people showed little faith in their capacity of delivering even basic health care services. Limitations of the public health centres — paucity of staff, specialists, supplies and equipment, limited emergency obstetric care, lack of essential drugs and basic facilities — have been resulting in an increasing shift towards private providers, in spite of the expenses involved:

- Delays and difficulties in accessing health care facilities, diagnosis and proper medication lead to complications, particularly among pregnant women resulting in continuum of malaria, associated morbidities, and at times causing deaths.

- Facilities to transport a patient from the peripheral to the referral centres are unavailable. Also, ambulance services become a tearing necessity in areas where health centres are distant from the villages

or in places where public transport is not adequately developed

- In specific context of malaria, many gaps and inadequate facilities and unethical practices were observed. The acute shortage of malarial drugs and supplies forces patients to buy medicines from the market, thus making treatment an expensive proposition. Doctors too are generally not available at the public health centres and are found engaging in private practice. This further compounds the problem of affordability.

- Diagnostic facilities are grossly inadequate. It is appalling that a patient has to wait for a month for a blood test report. This leads to a great delay in early detection and treatment of malaria positive especially *falciparum* cases. This can be fatal, particularly among pregnant women.

- Remote forested areas that are more susceptible to *pf* malaria remain unattended by the nearby doctors or the paramedical staff.

- Very little information is provided by the service providers and the outreach workers to women about risks related to pregnancy and malaria, mode of transmission etc.

In the absence of an effective public health system, people are being forced to use services of private providers. These providers have little social responsibility and are largely motivated by profit. Moreover, the indiscriminate use of medicines and injections by local compounders poses a great risk to the people as an accumulation can result in toxicity and other complications.

5.1 Recommendations

The first step towards effective intervention is to improve access to quality services. Provision of a service that is nearby, affordable, convenient, comfortable, and reliable is absolutely essential. It is important therefore to first locate health centres at easily accessible places, have qualified medical personnel, basic supplies, and facilities. Referral services also need to be strengthened. Timings of public health centres must be adjusted so that they are convenient for the people. Essential drugs must be made available free of cost at all levels of the public health structure.

1. Diagnostic facilities at the public health centres need to be established. The inadequate

provision as well as absence of laboratory technicians in Bokaro district should be immediately addressed. At present, there are eight technicians appointed for the Bokaro district (one per block), of which, only one post is filled, while two are hired on contract. It is important to fill the vacant posts and subsequently appoint more technicians and have basic diagnostic facilities at the public health set-ups. Viable mechanisms should be introduced to make diagnostic services more accessible, convenient and efficient, and free of cost. One such mechanism adopted by Jan Swasthya Sahayog, an organisation running a Community Hospital in Chattisgarh, is 'Public Transport for Public Health' whereby blood samples collected by health workers in villages are sent for examination through local transport and the report delivered back on the same day. Such models should be replicated and a community member (possibly a health care provider in the community) should be trained to collect samples and prepare the slide.

2. Since Jharkhand, particularly Gomia block, is endemic for malaria, there is a need to establish a malaria cell complete with all the necessary facilities for prevention and treatment of malaria. The Drug Distribution Centres (110 in Gomia block) can be upgraded to malaria cells as they have a good outreach in terms of location. These cells should be made functional with availability of information and malaria drugs. Further, information on these cells, their timings, and that malarial drugs are available free of cost should be disseminated widely in the community with proper information about dosage, interval, etc.

3. It is necessary to provide friendly and sensitive antenatal facilities for pregnant women at the village level. This should include regular health check ups and monitoring of body weight, nutrition levels, and checking for anaemia or other nutrition deficiencies. This will enable early identification of malaria in pregnant women and should be followed with giving prophylactic treatment. This should also be coupled with providing information on risk of malaria in women and infants.

4. Periodic training should be given to the medical and paramedical staff to strengthen their knowledge, understanding, and practices related to preventive and curative aspects of malaria. In view of the increasing reliance on local compounders, practicing and reaching out to remote areas, it is

essential to have training and capacity-building of "local" practitioners to equip them with basic skills of diagnosing and treating malaria. An attempt should also be made to link them up with referrals. Particularly important is the role of *dais* or Traditional Birth Attendants (TBAs). Since they play an important role in reaching out to women, they should also be integrated into the public health system. They should be recognised and involved in identifying pregnant women with malaria, providing primary level care, and referring for any complications.

5. It is the duty of the public health system to focus on the preventive aspects of malaria and other common illnesses in the area. This involves:

- Regular inspection of water bodies in the area and monitoring the status of sanitation.
- Adopting preventive measures to stop breeding of mosquitoes including implementation of protective and anti mosquito/ larval measures such as DDT spray, biological measures (as on paper), providing bed nets, and prophylactic malarial treatment.
- Gender sensitive IEC material should be generated and used in the field visits. This should particularly highlight the increased vulnerability to malaria among the poor, women, and pregnant women.
- Awareness must be created in the community on how they can be cautious and contribute to preventing malaria. Information should also be given on the nearest government health set-up and facilities therein.
- Local Community Based Organisations (CBOs) and other health networks in the area should be mobilised to act as monitoring bodies for effective implementation of the Government Malaria Program in their respective areas.
- Last, but not the least, in view of the abysmal socio-economic conditions and poor health status of women in particular, it is essential to re-establish and strengthen food security mechanisms. For this it should be mandatory to monitor the PDS centres in the area and make nutrition supplements available to women and pregnant women in an attempt to address their chronic state of ill-health and anaemia. The State should also address the issue of livelihood for marginalised groups—Dalit and *adivasis*—and generate regular employment for the poor.

Throughout the process of this research, the need to undertake a follow-up of the study findings with the collaborative organisation was emphasised. However the organisation is currently going through structural changes and a systematic implementation may not be feasible. But efforts will be made through a regional consultation for disseminating the findings and linking up with local groups and ongoing campaigns like the Jan Swasthya Abhiyan to plan effective interventions that feed into the outcome of the study.

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Annexure 1

Consent form

My name is and I am working with Sama Resource Group for Women and Health, Delhi.

We are doing a study on the interrelationship between gender and malaria among the rural poor in Jharkhand. This study seeks to understand how gender and socio-economic status play a significant role in prevalence of diseases like malaria. This study will be broadly based on the respondent's perceptions, their experiences in terms of seeking care, access to resources, wages, and so on.

As part of the study we will be asking you questions with regard to your history of pregnancy (in the case of pregnant women), details regarding the occurrence of malaria, access to resources, health care, etc. We will also be asking questions on intra-household relationships for more qualitative insights.

We might also have to refer to medical records if necessary for clarification, for which your permission will be taken. We also ask for your permission to record this interview in writing and/or using a dicta-phone.

Any information given by you will be strictly confidential and for research purpose only with a hope for further interventions.

Statement of consent

I am willing to participate in this study. I can also voluntarily withdraw from being interviewed at any point of time. I also give consent that the interview be recorded.

Signature of the participant:
(Thumb impression).

Annexure 2

Instructions for the Field Investigators

General instructions

- Each Field-Investigator will only do 10-12 interviews.
- One person will do the recording and the other will make the observations.
- Memorise the key questions in the interview schedule so that there is constant eye contact with the respondent for a proper flow of the interview.

Instructions for the interview

- Keep these key questions in mind, start by saying, for example, "We heard that you were suffering from malaria, we wanted to talk to you for sometime. Hope that we are not disturbing your work."
- Make the intent of the study clear to the respondents. Take their signatures on the form of consent after reading it aloud to them. Then proceed with the interview.
- Make sure that there is a smooth flow from introducing yourself, the study questions to the "thank you" at the end.
- The answers should be as descriptive as possible.
- In the process of interviewing, especially if the respondent is a woman, keep in mind whether her mother-in-law or her husband are present during the course of the interview and whether this affects the nature of the interview.
- While recording or making notes, make sure that respondent's expression (for e.g., instead of a "yes" or "no") should be noted immediately as it is.
- Use the check-list for observation/queries to note down details other than those given by the respondents.
- While questioning on treatment, probe and see if they show you prescriptions, medicines etc. (if yes, do note them down).
- Don't rush out after the interview. Spend time clarifying their doubts about the study.
- You may need to make multiple visits to the respondent's house, so build a proper rapport with the respondent. Also say, "Can we come again if we feel that we have missed out some questions or issues."
- After each in-depth interview, sit with the respondent with the background-profile schedule. Meanwhile, the other interviewer can make the key observations in the house/ workplace.

Post-interview instructions

- Once you finish with one respondent, complete the entire transcription before moving on to the next interview. Also go through all the questions to check for any omissions. If any questions have been missed out make sure you revisit the next day before proceeding to the next respondent.

Key observation pointers

Certain points need not necessarily mean “to observe” but might be helpful in capturing the larger picture:

- **Type of house:** quality of the house, number of rooms, rooftop, etc. [e.g., mud house, brick house or cemented house, *khaprail*, *phus*, tinned, *karkat* sheet (made of cement), asbestos].
- **Toilet:** use of open space/ commode, etc. Observe if there is any temporary shack made for urination near/ in the house (and whether it is open from top, if there is any stagnation of water/urination nearby therefore increasing exposure to mosquitoes).
- **Items in the house:** e.g. cot, (what kind of cot, who sleeps on it), chair, table, table fan, bulb, radio, bicycle, etc.
- **Food habits:** Check what they eat (for example, if you visit around lunch hour find out what is cooked in a casual fashion).
- **Observe the people in and around the house:** (during the interview) e.g., daughter, mother-in-law, others, and who helps them in household chores (include managing the livestock).
- **Any children around the house:** children could be either working as wage-labour or school-going or could be managing younger siblings and doing household work.
- **Type of clothing:** details, for example, observe the amount of woollen garments that men, women and children wear.
- **Care-givers:** If you find a respondent currently suffering from malaria, observe who is taking care etc., of him/her; also see if anyone else is suffering from malaria in the house.
- **Surrounding conditions:** in and around the house such as the type of ventilation, sanitation and water supply, number of livestock, etc.
- **Water logging:** around the respondent’s house or area especially during the monsoons. Observe the outlets (*kuccha nalas*, etc.).
- **Different layers of health care providers:** lab facilities within the area where the respondent lives. (e.g., *ojha*, *vaid*, etc)
- **Geographical area:** observe the surroundings and make detailed notes (as part of village mapping).

Annexure 3

Background profile (for all respondents)

Serial no.

Name of the village:

Type of locality (Rural/Tribal/Urban):

Background details

1. Name of the respondent:
2. Present age in years:
3. Sex

| | |
|--------|----|
| Male | 01 |
| Female | 02 |
4. Religion

| | |
|-----------|----|
| Hindu | 01 |
| Muslim | 02 |
| Christian | 03 |
| Sikh | 04 |
| Any Other | 05 |
5. Social composition
 - 5.1 Name of caste:
 - 5.2 Name of tribe:

Household details

6. Total number of family members

| Adult | Children | | | | |
|--------|----------|-----|------|-------|-----|
| | 0-1 | 1-5 | 5-10 | 10-15 | 15+ |
| Male | | | | | |
| Female | | | | | |
| Total | | | | | |

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• Any extra source of income

- No 02
Yes 01 (Tick the following)

| | |
|-----------------|--|
| Cultivable land | |
| Shop | |
| Livestock | |
| Any other | |

• Total monthly household income (Tick the following)

| | |
|---------------|--|
| Less than 500 | |
| 500-1000 | |
| 1000-1500 | |
| 1500-2000 | |
| 2000-2500 | |
| 2500+ | |

9. Marital status

- Married 01
Unmarried 02
Divorced 03
Separated 04
Widow 05
Any other 06

10. Age at marriage _____

11. If currently pregnant, number of completed months of pregnancy _____

12. Number of children born: girls:..... boys:.....

13. Number of children alive: girls:..... boys:.....

- Number of pregnancies
- Number of still births
- Number of miscarriages, abortions
- Cause of abortion. (Also who decided her abortion and where did she go for abortion)?

Education

18. Level of education completed

- Illiterate 01
Class I-V (primary) 02
Class VI-X (secondary) 03
Class XII (higher secondary) 04

Employment details

19. Nature of work*

| | | |
|----------|------|--------|
| Self | | |
| Spouse | | |
| Children | Male | Female |
| | | |

***For example:**

IEL/CCL
 Coal-cutting/ Coal-selling
 Weaving
 Rope-making
 Agriculture
 Carpenter
 Pottery
 Any other

20. Number of hours of work per day _____
21. Place of work (if home-based cite the type of work) _____
22. Distance travelled to the place of work (in hours) _____
23. Number of years of work _____
24. Respondent's average monthly income _____

Housing conditions

25. Present house is
- | | |
|---|-----------------------|
| Fully owned | 01 |
| Partially owned/shared with relative/friend | 02 |
| Rented | 03 Monthly rent _____ |

26. What is the source of water used in/outside your house for the following purposes?

| | Pond | River/Stream | Well | Hand pump | Private tap | Others |
|---|------|--------------|------|-----------|-------------|--------|
| Cooking | | | | | | |
| Bathing | | | | | | |
| Cleaning | | | | | | |
| Washing Clothes | | | | | | |
| Livestock | | | | | | |
| Others: (eg. watering seasonal vegetables) | | | | | | |

The interrelationship between gender and malaria among the rural poor in Jharkhand

| Closest source water | Who fetches it? | | | | | Time taken to reach the source (one way) |
|----------------------|-----------------|--------|----------|----------|------------------|--|
| | Self | Spouse | Children | | Others (specify) | |
| | | | Son | Daughter | | |
| River/stream | | | | | | |
| Pond | | | | | | |
| Well | | | | | | |
| Hand pump | | | | | | |
| Private tap | | | | | | |
| Others | | | | | | |

28. What do you use for lighting your house?

| | | | |
|--------------|---------------------|--------------------|--------|
| Kerosene oil | Electricity | | Others |
| | Personal Connection | Illegal connection | |
| | | | |

29. What kind of cooking fuel is used in the household?

| Cooking fuel | Who fetches? | | | From where? |
|--------------|--------------|--------|----------|-------------|
| | Self | Spouse | Children | |
| Firewood | | | | |
| Cowdung | | | | |
| Coal | | | | |
| Any other | | | | |

30. Is there any river, lake or pond nearby?

31. Is there any stagnant water nearby? If yes, is it covered or uncovered?

Annexure 4

Interview schedule guidelines and check-list for men and women

Instructions

Make sure that each set of questions is answered in detail. The order in which the respondent answers these questions may vary and the respondent may divert from the topic. In such cases, continue the conversation to avoid an abrupt end.

Check-list

Details about malaria

You had earlier mentioned to us that you suffered from malaria. Can you describe your experience starting from when and how you got it?

Take all details like what happened on the first day, then...etc. Ask about temperature changes, recognising symptoms specific of malaria, number of episodes, etc.

- **Treatment sought**

Once you knew it was malaria, what did you do about it? Did you seek any sort of treatment? When did you seek treatment? Was it delayed due to any reason?

Get all the reasons like lack of mobility, workload, no money etc.

Where did you ultimately seek treatment?

Check for all providers: vaid, ojha, health worker/ ANM/ SC/ PHC, private doctor/clinic, compounder, etc.

Also ask the respondents whether they took any gharelu upchar before approaching a provider.

What was the nature of treatment?

Get details about type of medication, effectiveness, side effects, etc. Ask for prescriptions, and medicines so that you can note down the names.

- **Gender-based differences in treatment**

Being a man/woman, did you face any differential treatment from any of these providers? Explain.

Probe the problems that they might have faced at the providers: attitude, their way of treatment etc.

Bring out the gender aspect. Find out if the respondent was accompanied by anyone.

- **Perception of government health centres**

What do you feel about the government health services? How far is the government health centre and what treatment is offered there? Who are working in the government hospital and how do they treat you? Is this enough? What more is needed?

Impact of illness

- **Physical**

Did you get rest while you were unwell or you had to continue work both household and paid work? For men, did it restrict travelling for work (for example as coal cutters)? Do you get help at the household level? Highlight the gender aspects— cooking, washing, fetching water, fodder, cleaning in and around the house, managing the livestock.

- **Social/familial**

What kind of problems did you face at home while you were ill? Work-burden, help from spouse, care provided, mobility, areas of work, wage/poverty.

Who took care of you during this period?

Explore how their gender came in the way of recovery? For example being a son or a daughter-in-law was there a difference in care?

- **Financial**

Income and household income:

Do you work? If yes, how much do you earn? Who all earn in your family? Are your earnings enough to meet the household expenses? What amount/percentage of your total monthly income do you spend on health care?

Expenditure incurred:

How much did you end up spending on treatment for malaria? How did you manage the costs? Who helped you financially during this period?

Credit and indebtedness:

Were you compelled to take credit? If yes, from whom? Who are these moneylenders?

Get details of moneylender— caste/tribe, occupation, and economic status. What are their interest rates?

Get details of what items are usually pawned (are they dowry items and is there a system of dowry?

Mortgaged land/house)?

Impact of indebtedness:

Due to expenses on treatment did you have to cut down on other expenses (like food, education, or a child had to do wage-work, etc.)? *Get malaria- specific details and move onto the general health picture.*

Find out other illnesses in the family? (Example TB, typhoid, heart attack, jaundice, diarrhoea, etc.)

Causes of malaria

- What do you think are the **causes of malaria**?

- **Sleeping habits (as part of housing conditions)**

Where do you sleep: inside or outside your house? What do you sleep on? Do you use a mat (made of *khajur*), or *bora* (jute bags), cot (*khatiya*), others? Who in the family uses mosquito nets for sleeping?

- **Defecation**

Where do you go for defecation? *Ask how far do they walk/ are there any specific hours for women (e.g. early morning or late nights).*

- **Rituals/practices**

Are there any special rituals/ practices practised when someone suffers from malaria?

Woman respondents

- Is she in her natal or conjugal home (for married women)?
- What are the taboos/norms/rituals associated with bathing during menstruation? Where do they wash/dry their menstrual clothes?

Annexure 5

Interview schedule guidelines and check-list for pregnant women

Instructions

Make sure that each set of questions is answered in detail and even if the respondent diverts from the topic, continue the conversation to avoid an abrupt end.

Check-list

Details about malaria

You had told us/ we were told that you had malaria. Can you describe your experience starting from when and how you got it?

Take all details like what happened first day, then... etc. Ask about temperature changes, recognising symptoms specific to malaria.

Which stage (month) of your pregnancy did you get malaria?

Get all the details.

Did you suffer from malaria during previous pregnancies? If yes, please give the details of the previous case history? *(For example, had to undergo abortion, stillbirth, impact on her health, etc.)* Do/did you visit your doctor regularly for gynaecological check-ups? (if these women are still in their pregnancies).

- **Treatment sought**

Once you knew it was malaria, what did you do about it? Did you seek any sort of treatment?

Ask the respondents whether they took any gharelu upchar before approaching a provider. Check for all the providers: Where did you ultimately seek treatment? (Home remedies, vaid, ojha, health worker/ ANM/ SC/ PHC, private doctor/clinic, compounder). Ask for prescriptions or medicines so that you can note down the names.

Do you feel that there are any side effects of the drug given for treatment for malaria?

Find more about the type of medication, its effectiveness, etc. Basically try and see if she suspects the harmful side effects of the drugs.

- **Gender based differences in treatment**

What is the difference in treatment given by these providers? Probe the problems they might have faced at the providers: attitude, access issues, etc. Bring out the gender aspect.

- **Perception of government health centres**

How far is the government health centre and what treatment is offered there? Who are working in the government hospital and how do they treat you? Is this enough? What more is needed?

Where were you while you sought treatment? *(For example maternal house).* How long was the period of illness and treatment.

Were there any complications during pregnancy and because of malaria during pregnancy? *Details.*

Are there any diet restrictions during pregnancy? Was/is there any specific food item for you (as a pregnant woman)?

Impact of illness

- **Social/familial**

What kind of problems did you face at home while you were ill? Work-burden, help from spouse, care provided.

Who supported you during this period of illness and delivery? (husband, in-laws, mother, other relatives, neighbour/ friend) Did anyone take you to a doctor? *Explore how their gender came in the way of recovery. (Workload, mobility, areas of work, wage/poverty).*

- **Financial**

Income and household income:

If yes, how much did you earn? Were you able to continue work while you were unwell? Who all earn in your family? *Get all the details about income and expenditure.*

Working conditions:

Where do you work? Describe the nature of work, get all the details. Is there more chances of mosquito bites at home or where you go to work? *Try to differentiate between risks at home and at work.*

Expenditure incurred:

How much did you end up spending on treatment? How did you manage the costs? Who helped you financially during this period? What are the other expenses involved other than medicines, for example, diet, rituals, abortions, MTPs etc.

Credit/indebtedness:

Who undertook all the expenses and how? *Explore credit/pawning...with whom, what and interests borne by them/indebtedness.* Were you compelled to take credit? If yes, from whom. *Get details: what are the items (are they dowry items and is there a system of dowry? Mortgaged land/house)?* Due to expenses on treatment did it lead to any cut in other expenses (like food, education, or a child had to do wage-work etc.)?

Who are these moneylenders? *Ask them their socio-economic details like caste/tribe, occupation, and income if possible.*

Work load/ triple burden of work for women (gender aspects to be highlighted):

What are the chores that you now do/did during pregnancy? Is it different from what you used to do when you were not pregnant? (For example, cooking, washing, fetching water, fodder, cleaning in and around the house, managing the livestock).

Are you more exposed during pregnancy? (For example, if her blouse does not fit her, her stomach area is more exposed, what does she usually wear? For e.g., during winters, does she lift her sari while working and even while at rest). All these details should be carefully taken, as this is associated with the burden of work.

Cause of malaria

- What do you think are the **causes of malaria**?

- **Sleeping habits (as part of housing conditions)**

Where do you sleep—inside or outside your house? What do you sleep on? Do you use a mat (made of *khajur*), or *bora* (jute bags), cot (*khatiya*), others? Who uses mosquito nets for sleeping? Find out for all the family members in detail. Use the observation indicators.

- **Defecation**

Where do you go for defecation? *Ask how far do they walk/ are there any specific hours (e.g. early morning or late nights).*

- **Rituals/practices**

Are there any special rituals/ practices when someone suffers from malaria?

- **Restrictions**

Are there any restrictions placed on pregnant women especially with regard to sexual relations with the spouse? Are these being practised even now? (Yes/No and why?) *Then discuss the narration and differential risks. To highlight the difference between norm and reality, (for e.g., no sexual intercourse after the first trimester, now it is different, especially among the younger couples. The questions are specific to period during pregnancy, as it might increase risks to exposure to, for example, go for sexual practises outside the house, go to the forests or some other place).*

- **Taboos/norms associated with pregnancy/menstrual cycle.** What are the taboos, norms associated with bathing, menstrual cycle, pregnancy, etc? *To understand whether pregnancy is a protective factor or a risk factor.*

- **Menstrual period:** How do women manage during their menstrual period, where do they wash their menstrual clothes?

Annexure 6

Data of Jharkhand, Bokaro district and Gomia block

1. Socio-demographic profile of Jharkhand

| | Total population | SC Population | ST Population | Proportion of SC population | Proportion of ST population |
|-----------|------------------|---------------|---------------|-----------------------------|-----------------------------|
| Jharkhand | 26,945,829 | 3,189,320 | 7,087,068 | 11.8 | 26.3 |

Source: Primary Census Abstract, Census of India, 2001; <http://www.censusindia.net>

2. Birth rate, death rate, and infant mortality rates

| State | Natural divisions | Birth rate | Death rate | Infant mortality rate |
|-------|-------------------|------------|------------|-----------------------|
| Bihar | Jharkhand | 29.5 | 10.0 | 67.3 |
| Bihar | Central | 32.3 | 10.0 | 74.4 |
| Bihar | Northern | 33.3 | 9.6 | 67.4 |

Note: Based on the calculations by natural divisions in the Hindi speaking belt.

Source: Census India Issue No 13: 2002; www.censusindia.net

3. Demographic profile for Bokaro district, Jharkhand

| 3.1 Total population | Male | Female | Decadal growth (1981-1991) | (1991-2001) |
|----------------------|---------|---------|----------------------------|-------------|
| 1,775,961 | 937,188 | 838,773 | 32.57 | 22.11 |

Source: Census of India 2001; www.censusindia.net/cendata

| 3.2 Sex ratio | | Population density | |
|---------------|------|--------------------|------|
| 1991 | 2001 | 1991 | 2001 |
| 865 | 895 | 508 | 621 |

Source: Census of India 2001; www.censusindia.net/cendata

4. Literacy data in Bokaro district, Jharkhand

| Literate | | | Literacy rate | | |
|----------|---------|---------|---------------|------|--------|
| Total | Male | Female | Total | Male | Female |
| 942,078 | 610,688 | 331,390 | 63 | 77 | 47 |

Source: Census of India 2001; www.censusindia.net/cendata

5. Population break-up male, female, general, SC and ST, and number of literates and non-literates (male and female) in five panchayats in Gomia block

| | Gomia | Hossir | Saram | Hazari | Daniya |
|-------------------|-------------|-----------|-------------|-----------|-----------|
| Total population | 28445 | 15628 | 28152 | 17113 | 3014 |
| Sex Ratio M/F | 15115/13330 | 8090/7538 | 15049/13103 | 9330/7768 | 1573/1441 |
| S.C. (M/F) | 2296/2150 | 1022/952 | 1999/1716 | 2150/1705 | 156/130 |
| S.T. (M/F) | 235/970 | 1298/1270 | 361/274 | 498/466 | 69/807 |
| General(M/F) | 9594/5882 | 3537/1478 | 7950/2719 | 5793/2631 | 378/45 |
| Literate(M/F) | 1123/36 | 1234/93 | 1015/47 | 634/30 | 553/53 |
| Non-literate(M/F) | 5521/8164 | 4543/6060 | 6399/9749 | 3537/5737 | 1195/1396 |

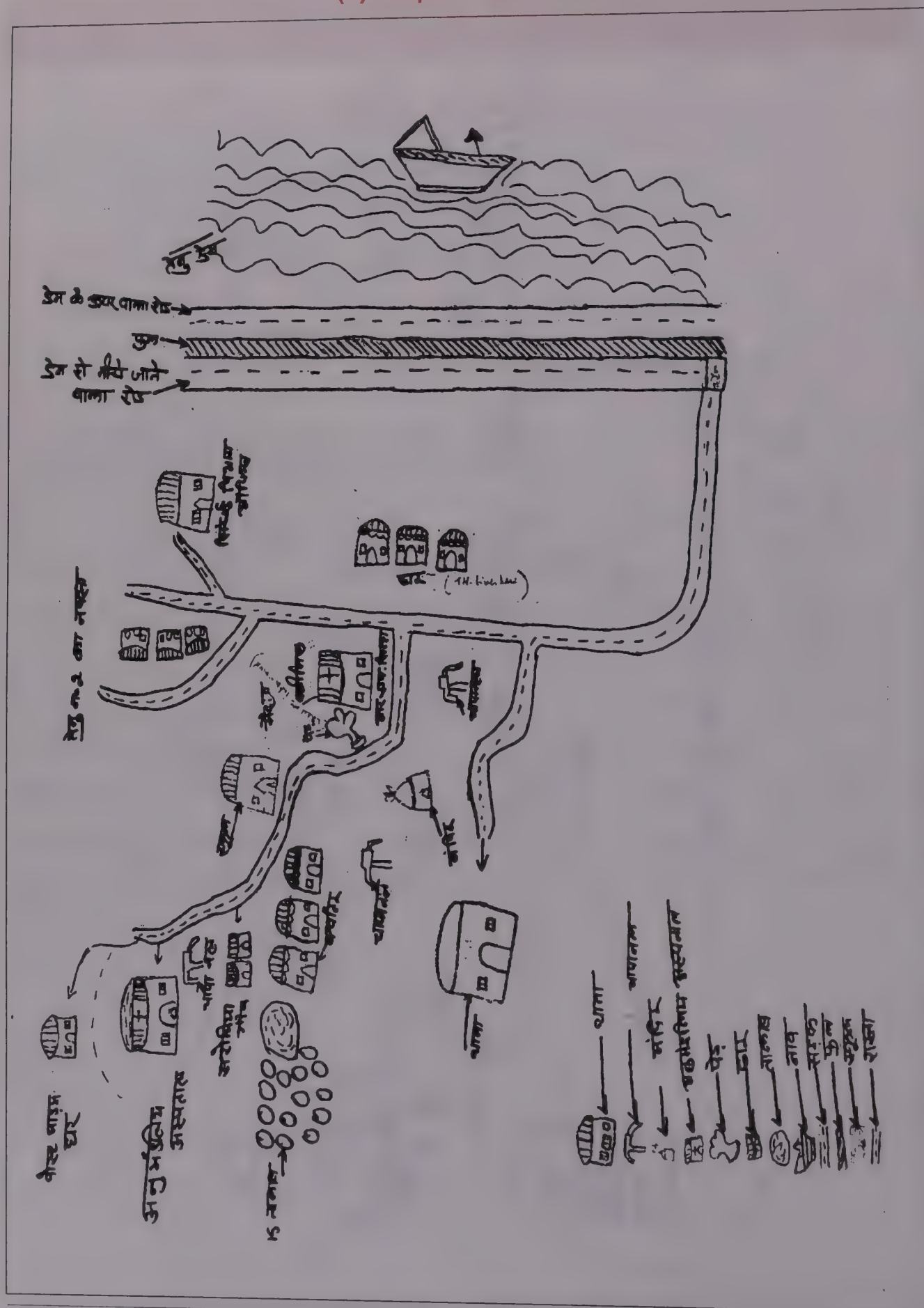
Source: Block office, Gomia, Jharkhand; December 2003

Annexure 7

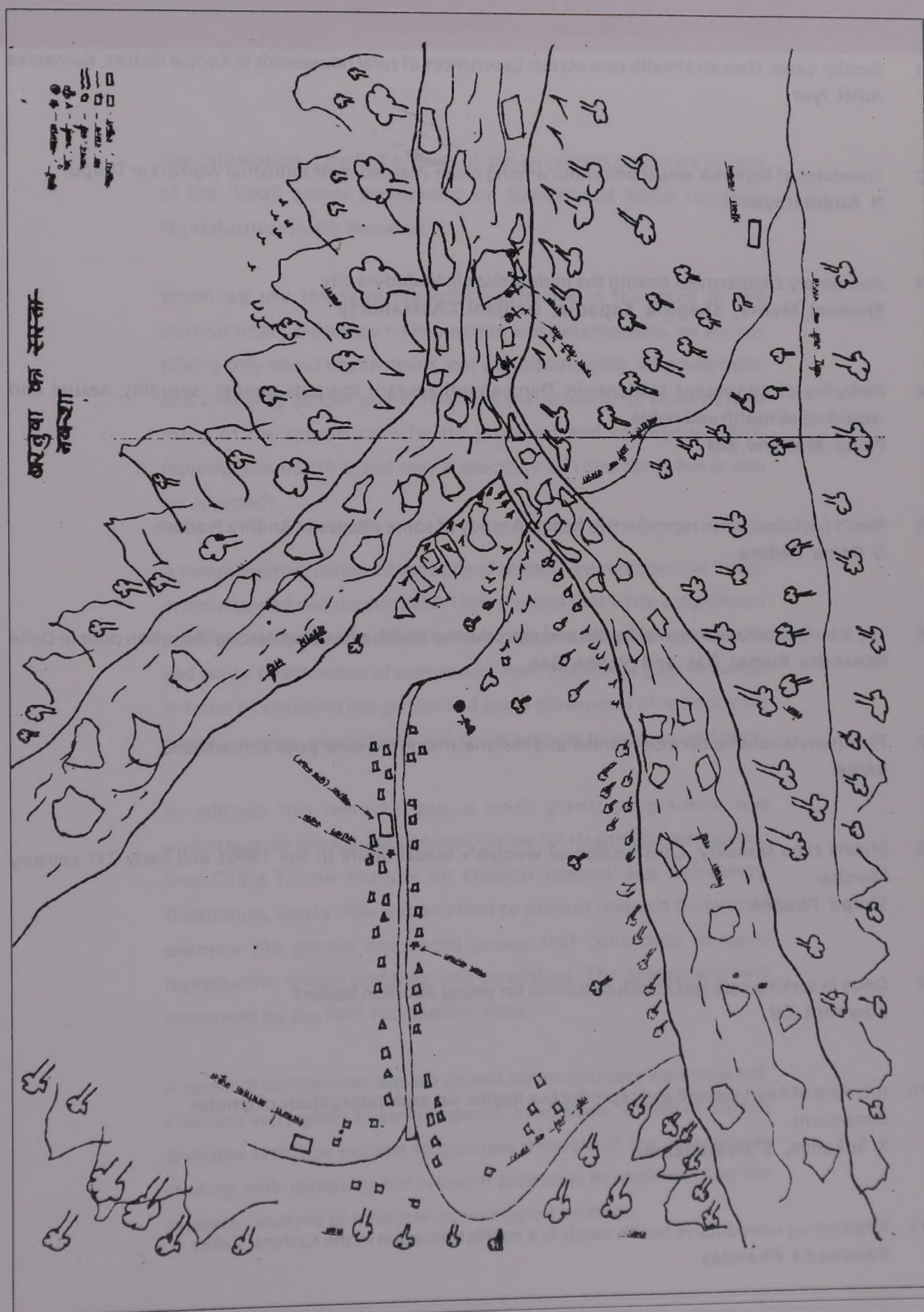
(i) Map of Tulbul



(ii) Map of Tenu Ghat



(iii) Map of Bartua



List of studies completed under the initiative:

1. Gender, caste, class and health care access: Experiences of rural households in Koppal district, Karnataka
Aditi Iyer
2. Correlates of high-risk sexual behaviour among never-married male industrial workers in Tirupur
N Audinarayana
3. Involuntary childlessness among the middle class in Vadodara city
Bhamini Mehta, Shagufa Kapadia, Debjani Chakraborty
4. Attitudes of adolescent students in Thiruvananthapuram towards gender, sexuality, sexual and reproductive health and rights.
Philip Mathew KM
5. Men's participation in reproductive health: A study of some villages in Andhra Pradesh
G Rama Padma
6. The interface between mental health and reproductive health of women among the urban poor in Delhi
Ranendra Kumar Das and Veena Das
7. The interrelationship between gender and malaria among the rural poor in Jharkhand
Sama
8. Middle class sexuality: Construction of women's sexual desire in the 1990s and early 21st century
Mumbai
Shilpa Phadke
9. Delay in seeking care and health outcomes for young abortion seekers
Sowmini CV
10. Interface of heart disease and reproductive health: An exploratory study of gender dimensions
R Sukanya, S Sivasankaran
11. Negotiating reproductive health needs in a conflict situation in the Kashmir Valley
Zamrooda Khanday

About the Small Grants Programme on Gender and Social Issues in Reproductive Health Research

This publication is part of a series of eleven reports produced as part of the 'Small grants programme on Gender and Social Issues in Reproductive Health Research.'

When we use the term reproductive health in the spirit of the International Conference on Population and Development, we are not talking only about health needs, but also about rights, empowerment and changing gender power relations that underlie or contribute to many of the reproductive health problems and conditions. Thus, reproductive health is not only a *spectrum of conditions*, but is also an *approach*.

A comprehensive review of the body of research on reproductive health in India carried out during 1990-1999 showed that while a significant contribution had been made in terms of documenting the reproductive and sexual health *needs* of women and men, there large gaps remained in terms of analysing the gender and social dimensions of reproductive health – causes, perceptions and consequences to women and men.

To address this research gap, a small grants programme was undertaken by the Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala. This was an effort to support research that would examine the gender and social causes that contribute to many reproductive health problems and conditions. The programme was supported by the Ford Foundation, India.

A research competition was set up and eleven grantees were selected. Grantees were given financial support. In addition, a team of experts provided technical support to grantees throughout the programme, starting with reviewing the research proposals to implementing the research, analysis of information and report writing.

SMALL GRANTS PROGRAMME ON

' To consider reproductive health as an approach, then, we must take a holistic view of women and men – in their societies, in their families, in their sexual relationships – and look at their lives and their needs comprehensively. This demands that we include but move beyond the biomedical model which tends to look at individuals out of context, and is insufficient in its analysis of causes of ill-health '

(WHO, Interpreting Reproductive Health, ICPD + 5 Forum, The Hague, 1999, p.17)

GENDER AND SOCIAL ISSUES IN REPRODUCTIVE HEALTH RESEARCH